



Final Report

# Analysis of Mobility Options

Submitted to Regional Transit Service

by IBI Group

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# 1. Introduction

## 1.1 Analysis of Mobility Options: Purpose and Background

This document summarizes findings and recommendations of the Analysis of Mobility Options study conducted by IBI Group on behalf of Regional Transit Service (RTS) of the Rochester-Genesee Regional Transportation Authority (RGRTA).

The Analysis of Mobility Options study is Stage 2 of the Reimagine RTS initiative to restructure and reimagine transit service delivery in Monroe County, NY, including the greater Rochester urbanized area.

Stage 1 of Reimagine RTS proposed fixed-route network restructuring. The objective of this restructuring is to focus routes in areas with appropriate density, diversity, and design to successfully support fixed-route service in a fiscally-sustainable manner:

- **Density:** The measure of intensity of development in a given area, which means more potential transit customers.
- **Diversity:** The type and variety of uses in an area. A mixture of uses (residential, office, commercial) in close proximity creates all-day, all-week activity while also reducing the need for private vehicles.
- **Design:** The design and scale of the street network, streets, and surrounding land uses determines whether development is design for cars and traffic, or people and places.

However, where sufficient density, diversity, and design characteristics are not present, certain areas of the existing RTS service area will see reductions or eliminations of former fixed-route services. Seven areas have been identified by RTS and are known as Community Mobility Zones, or CMZs:

- Brockport CMZ
- Greece CMZ

- Henrietta CMZ
- Irondequoit CMZ
- Lexington Avenue CMZ
- Pittsford/Eastview CMZ
- Webster CMZ

The focus of this mobility study is to identify preferred new mobility options for each of the seven CMZs, so that existing RTS fixed-route customers will have continuing service options following the implementation of the Reimagine RTS network.

Additionally, this study analyzed how new mobility options can better meet the needs of those who live, work, play, and study within the CMZs by better matching service delivered to the travel needs of specific user groups. This includes mobility options that may provide more hours of service, more frequency, greater coverage, universal access, and improved convenience.

## 1.2 What is New Mobility?

Across the transit industry, there is a tremendous amount of innovation underway to develop new mobility options beyond conventional fixed-route bus and paratransit services. Many of these alternatives are enabled or enhanced by new technologies, such as mobile applications for trip discovery, booking, and fare payment. Peer transit agencies across the U.S. have been adapting these new mobility modes to better meet the needs of communities that are not particularly well-served by conventional fixed-route transit service.

New mobility captures a wide range of service modes and variations, including on demand and flex route microtransit, personal mobility on demand (PMOD), and car/bike sharing (see Section 3 for detailed descriptions). The candidate mobility modes

considered in the analysis are introduced later in this document.

While the modes captured under the rubric of “new mobility” are diverse, they share certain common characteristics:

- **Smaller vehicle capacity**, ranging from 4-passenger sedans to cutaway buses seating 8-12 persons. The smaller vehicle capacity makes these options more suitable for areas with low transit trip generation.
- **Customer responsiveness**, such as the ability to reserve rides or requesting a flex route service for a pick-up or drop-off. This provides increased convenience for the customer, such as the ability to access destinations out of reach of fixed-route bus stops, or to travel on a more flexible schedule.
- **Enabling Technologies** that makes service delivery possible, or at least more convenient. An example is the use of a mobile phone app to request a trip. That said, peer transit agencies and third-party solution providers have developed tools to ensure that new mobility services are accessible to those who do not have access to such technologies. An example is the use of a call center to make a trip request in addition to a mobile app.
- **Accessibility**, so that service is available to the largest possible number of users. While not always a complete substitute for conventional ADA Paratransit services, new mobility options can provide increased freedom of mobility for travelers with disabilities, such as more spontaneous same-day travel. An example is the use of lift-equipped vehicles, or the provision of curb-to-curb service that can overcome access barriers related to reaching a bus stop. It is assumed that any new mobility solutions implemented by RTS would be ADA accessible.
- **New Operating and Business Models** that may include central reservations and dispatch systems, new customer service interfaces, and operating schemes that hybridize aspects of fixed-route and paratransit/demand response operations. Some peer agencies have initiated operations in-house, using agency staff and agency-owned fleets and infrastructure; others have implemented new mobility through third-party providers such as microtransit operators, taxi companies, or transportation network companies (TNCs).

New mobility options can help to overcome some of the challenges to transit service delivery that are common in the Community Mobility Zones. These challenges include:

- **Low transit trip generation**, due to development patterns, low density and other factors.
- **Dispersed origins and destinations**, such as arterial retail shopping centers, housing subdivisions, and industrial parks.
- **Poor first/last mile access** to bus stops due to lack of sidewalks, discontinuous street grids, etc.
- **Travel demand outside of traditional peak commuting hours** – for example, shift and retail workers or college students.

### 1.3 What is the Role of New Mobility in the Reimagine RTS Network?

As introduced previously, new mobility options in each of the seven CMZs are intended first and foremost to provide continuing service to customers of the existing fixed-route network that will no longer have fixed route service following the Reimagine RTS route restructuring. This includes a diverse array of customers – commuters traveling to the urban core and major employment centers; transit-dependent persons who rely on service for employment, shopping, medical care, and other life services; school pupils; college and university students, recreational trips, and others.

In the RTS system, new mobility options may be used to serve intra-zone trips within the CMZs (such as from home to a local supermarket or school), as well as connections to the rest of the RTS network for travel further afield.

RTS envisions Connection Hubs in each CMZ to facilitate transfers between mobility services and future fixed route services.

Locations of Connection Hubs were being finalized at the time of this report, but presumed locations have been identified by RTS and are discussed through the remainder of this document. This study assumes that Connection Hubs will be operational by the start of mobility service to provide connections to other RTS services.

## 1.4 Consistency with Reimagine RTS Guiding Principles

The Analysis of Mobility Options study was conducted within the framework of five Reimagine RTS Guiding Principles.

The addition of new mobility modes to the transit service offerings in the region can directly support each of the guiding principles, as discussed below.

- **Maximize Ridership:** Fixed routes proposed for elimination in Stage 1 have underperforming ridership relative to other RTS routes. This is symptomatic of the challenges of providing fixed-route service given the diversity, density, and design of the CMZs, and also suggests that service provision is not well aligned with community needs. Adoption of new mobility services will allow RTS to provide service to areas with lower transit trip generation, and is also intended to grow ridership through improved quality of service.
- **Enhance the Customer Experience:** Existing challenges for customers using fixed-route services in the CMZs include: limited bus stop accessibility due to limited first/last mile connectivity to destinations; infrequent service; limited service span, and limited weekend and mid-day. New mobility alternatives can specifically address some of these challenges, particularly in areas with relatively low density and dispersed trip generators like the CMZ.
- **Ensure System Sustainability:** High fixed operating costs plus low ridership lead to poor performance of existing fixed-route services when measured by productivity metrics such as subsidy per trip or cost per passenger mile. Financial sustainability is a key consideration in providing alternative mobility options that are affordable and responsive to community needs.
- **Expand Public Transit to Include More Mobility Options:** RTS is committed to exploring alternative service models and modes beyond traditional fixed-route and paratransit services. This study examines the applicability of cutting-edge mobility modes that are being developed and implemented by peer transit agencies, to determine which of these emerging options are a good fit for RTS and its customers in the CMZs.

- **Coordinate with Community Initiatives:** Convenient, equitable, and accessible transportation is fundamental to the prosperity of local communities and the well-being of residents. From job access for entry level employment, to mobility of seniors and the travelers with disabilities; to access to educational, social, and recreational opportunities, new mobility options can better align service delivery with community needs and aspirations.

## 1.5 Stakeholder and Community Outreach

A series of stakeholder and public outreach events were conducted to inform the study analysis by identifying community needs and concerns and reviewing proposed recommendations for new mobility options. Outreach activities were led by RTS executive management and outreach staff, with support from the consultant team.

- In November and December 2018, the team met with stakeholder representatives in the CMZs to discuss the objectives of the mobility study and to better understand community needs and concerns. Stakeholders varied by CMZ but generally included: social service representatives, school districts who currently rely on RTS service for pupil and/or Urban-Suburban transportation, college and university representatives, key employers, private sector stakeholders, and community officials such as Town Supervisors.
- In February and March 2019, the RTS executive team presented draft recommendations to stakeholders, customers, and community representatives through a series of public information sessions in the CMZs.
- A briefing on the draft recommendations was provided for the RGRTA Board of Commissioners at its monthly meeting held on February 7, 2019.

Following the completion of this report, mobility recommendations will be subject to review and adoption by the RGRTA Board of Commissioners in summer of 2019, as part of the overall adoption of Reimagine RTS recommendations. As part of this process, public hearings will be conducted in spring of 2019.

## 1.6 Key Assumptions

The recommendations developed by the consultant team reflect a set of key assumptions as described below. These key assumptions guided the team's interpretation of objectives, analysis of mobility alternatives, and feasibility of those alternatives within the context of the RTS operating environment and the objectives of the Reimagine RTS initiative.

The key assumptions were reviewed with RTS staff and the RTS Project Advisory Committee (PAC) during the development of the recommendations. Note that modifications to the key assumptions could impact the validity of the recommendations, and/or approach to implementation of the recommendations.

The key assumptions are as follows:

- **Core Objective to Serve Existing RTS Customers:** The primary objective of RTS is to serve current customers of fixed-route services that will be curtailed or eliminated as part of Reimagine RTS. At a minimum, mobility alternatives must serve a similar geographic area/corridor to the former fixed routes, with a similar service span and frequency.
- **Service Enhancements:** RTS recognizes that community stakeholders have proposed service enhancements that meet the needs of unserved/underserved constituents. Community enhancement beyond fixed route service replacement will be considered in development of mobility alternatives. However, provision of such services may be contingent on supplemental funding from an RTS community or business partner.
- **Assumption of RTS Direct-Operated Mobility Services:** RTS has stipulated that core mobility services will be direct operated by RTS and its employees. This is an important assumption, as it precludes certain operating and business models being implemented by peer transit agencies that rely on contracted or third-party operations.
- **Commuter Services:** RTS will continue to provide replacement commuter services for current customers travelling to and from: Hilton, Hamlin, Clarkson, Sodus, Lyons, Newark, and Avon to and from Rochester.
- **Contracted Services as a Supplement to Direct Operations:** RTS will consider mobility alternatives that are contract operated as a supplement to the core, direct operated service.
- **A Seamless, Integrated Network for Customers:** The new mobility options implemented in the CMZs are part of the larger, regional RTS network, and must feel like part of that integrated network from the customer perspective. For example, a significant portion of customers are expected to transfer to RTS fixed-route services at Connection Hubs and other locations. There is also a need for consistency of the customer experience on issues ranging from trip “discovery” (knowing that a mobility/transit option is available), to fare payment, to onboard customer interactions, and service branding.
- **Implementation Timeline:** The preferred mobility option must be operational in all CMZs no later than the implementation of Reimagine RTS fixed route service change. This date is currently assumed to be summer of 2020. This implementation timeline is critical to ensure that there is no gap in service to existing customers in the CMZs when the new Reimagine RTS fixed route network is implemented. Pilot programs or proof-of-concept in specific locations may be considered (to be determined in a future project implementation phase).
- **Customer Subsidy:** The RTS subsidy per customer for new mobility options should be consistent with system-wide subsidy levels. Because existing fixed-route services tended to under-perform in service efficiency, this suggests a lower subsidy per customer than the fixed route services being replaced.
- **Service Span:** A minimum service span would replicate the hours/days of week of the existing fixed route service. A desired enhancement is to provide service spans and days of week that are consistent with fixed-route services elsewhere in the network, most notably connecting services at Connection Hubs. Future fixed route service span will be 5:00am-midnight on weekdays (19-hour service span), and 6:00am-midnight on weekends/holidays (18-hour service span).
- **Equity/Title VI Civil Rights Requirements:** Mobility options must comply with federal Title VI Civil Rights requirements. This includes impacts to populations affected by service changes in the CMZs, as well as service design features such as accommodating those without access to smart devices/technology for ride booking, fare payment, etc.

- **Accessibility and Paratransit:** It is assumed that ADA/paratransit and general customer populations could be co-mingled on future mobility services, which will use accessible vehicles. As part of Reimagine RTS Stage 3, RTS will develop a solution for paratransit service that meets the needs of the community and aligns with the recommendations in this report.
- **Pupil Transportation:** Urban-Suburban and other school-age students currently use RTS fixed routes in 3 of 7 CMZs, as primary and/or supplemental transportation as part of RTS' contract with the Rochester City School district (RCSD). RTS and RCSD are working together to ensure students in this program currently served by RTS continue to have transportation when Reimagine RTS is implemented.
- **Fare Policy:** Base fare for new mobility options should equal the base fare for fixed route (\$1.00 adult). A premium fare would be considered for extended coverage beyond the existing fixed-route service areas in the CMZs. Unbanked persons must have access to equitable fare payment methods that are not reliant on access to technology, credit cards, etc.
- **Scalability:** To the extent feasible, mobility options should be scalable to support changes in service level in response to manifest customer demand levels, new business or community partnerships, or changing funding availability or costs.



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## 2. Community Mobility Zones (CMZs): Existing Characteristics

### 2.1 Introduction

The Analysis of Mobility Options covers seven Community Mobility Zones (CMZs) identified by RTS (Figure 2-1). These are:

- Brockport CMZ
- Greece CMZ
- Henrietta CMZ
- Irondequoit CMZ
- Lexington Avenue CMZ
- Pittsford/Eastview CMZ
- Webster CMZ

This section provides an overview of the existing demographic, geographic, and transit service characteristics of each CMZ. It also summarizes community feedback provided during outreach meetings on needs, issues, and concerns that were considered in the evaluation of the mobility alternatives and development of the recommendations.

A more detailed assessment of CMZ travel and demographic characteristics may be found in a companion technical document prepared as part of this study: Analysis of Mobility Options: Community Mobility Zone (CMZ) Socio-economic Profiles.

### 2.2 Summary of CMZ Characteristics

Each CMZ is a unique community with its own history, user needs, and future aspirations. However there are certain commonalities among the seven CMZs that are noteworthy from the perspective of the mobility analysis.

### Existing Transit Services

Fixed-route service today includes a mix of ‘local’ and ‘express’ style routes (serving a point-to-point central city commuter market, sometimes via the expressway). Overall service span tends to be short, with rapidly diminishing service frequency after 7:00pm and on weekends (if service is operated at all). Service frequencies are low, with 60-minute or greater headways outside of peak periods.

The minimal service levels, and the low ridership they have historically generated, speak to the need to overhaul transit service delivery in these communities, and justifies the elimination of a substantial number of fixed route miles in the CMZs in the Reimagine RTS plan.

Existing fixed-route structures in the CMZs tend to fall into two categories, linear and dispersed structures:

- **Linear Route Structures:** These include the Brockport, Pittsford/Eastview, and Webster CMZs. In these zones, the fixed route services being replaced generally follow a linear corridor. Examples include the Route 104 corridor in Brockport and the Route 103 corridor in Webster. The Pittsford/Eastview CMZ is more complex, with local and expressway routes operating in the zone. However, there is a predominantly linear corridor between the Village of Pittsford on the North, and the Eastview Mall area on the south.
- **Dispersed Route Structures:** These include the Greece, Henrietta, Irondequoit, and Lexington Avenue CMZs. In these zones, the fixed routes being replaced form a grid-like or radial pattern across a wide swath of the CMZs, rather than a single linear corridor. The dispersal of origins and destinations suggests a “many to

many” pattern of trips within the existing route structure. An example is the Lexington Avenue CMZ, where the zone contains numerous employment centers, social services, and residential areas; however there is not one dominant destination or interface point with the future fixed-route network. Future mobility trips in the area once served by fixed routes could involve a large number of origin-destination pairs that cannot be conveniently linked by a linear route structure.

## Other Transportation Service Providers

Current providers of transportation services in the seven Community Mobility Zones (CMZs) may play a role in shaping new mobility solutions for each Zone.

A detailed summary of existing transportation service providers in the CMZs has been prepared in a technical document: Analysis of Mobility Options: Community Mobility Zone (CMZ) Service Provider Identification.

In each of the CMZs, a network of multiple, special-purpose transportation providers have evolved to fulfill the needs of specific constituencies requiring specialized transportation services. Examples include:

- Medical Transportation
- Senior Center/Senior Housing Transportation
- Services for Travelers with Disabilities/Social Service Transportation
- Faith-Based Groups
- Veterans Services
- Private Community Shuttles

Because the geographical areas served by many providers are county-based, there is significant overlap between service providers in each CMZ.

RTS recognizes that current providers of transportation services may benefit from more inclusive and versatile transportation options in the CMZs. The ability to service multiple users that currently rely on stand-alone transportation will increase community adoption and may reduce financial burden for non-profit and volunteer organizations.

## Land Use, Density, and Demographics

While there are pockets of higher-density, walkable development within the CMZs, such as the Villages

of Brockport and Webster, the land use patterns and density of the CMZs are dominated by post-war, automobile-oriented development patterns. This includes a proliferation of commercial retail strips along major arterials, suburban single-family and multi-family housing tracts, office and industrial parks, and self-contained institutional campuses such as Rochester Institute of Technology (RIT), St. John Fisher, and Nazareth Colleges. Newer development, such as along the Calkins Road corridor in Henrietta, is continuing this pattern of development to areas that are removed from existing RTS services.

The prevailing land use and development patterns, as well as the relatively high auto-ownership of households in the CMZs, likely have contributed to the relatively low performance of fixed-route transit in these areas. However, it also speaks to challenges that certain new mobility options can help overcome to improve the responsiveness of transit service to community development and user needs.

## User Groups and Identified Needs

Demographic analysis and outreach to community stakeholders suggests that there is a gap between existing needs of customers and the existing fixed route service that is provided (or, any fixed route service that can be provided).

For example, community stakeholders noted the need for persons engaged in entry-level retail or service work to have access to employment transportation outside of peak commuting hours, including early mornings and late evenings. Affordable housing, group housing, and assisted living facilities are often located away from existing fixed transit routes. Seniors and those with disabilities may have difficulty accessing bus stops from their origins and destinations. Students without cars or below driving age often have limited mobility options in auto-oriented communities. This includes access to off-campus housing and services throughout the day and into late evenings for college and university students.

Current fixed-route limitations in weekend and evening service can also pose a challenge for transit dependent persons for a variety of trip purposes.

## Pupil Transportation and Urban-Suburban Interdistrict Transfer Students

RTS provides pupil transportation for Rochester City School District (RCSD) students per contract with RCSD, including students within the District as well as students enrolled in the Monroe County Urban-Suburban Interdistrict Transfer Program. The purpose of the program is “To voluntarily decrease racial isolation, deconcentrate poverty and enhance opportunities for students in the Rochester City School District and in the suburban districts of the Greater Rochester Area.”

Student transportation can include regular school day transportation organized around morning and afternoon “bell times,” as well as before-and after school transportation. The involvement of RTS has evolved organically over time based on the availability for suitable RTS services and the needs of the district.

Three of the seven CMZs have existing Urban-Suburban student arrangements that may be impacted by changes to RTS services in the CMZs. These are:

- **Brockport CMZ** (Brockport School District Elementary, Middle, and High Schools; after school transportation only)
- **Irondequoit CMZ** (West Irondequoit High School and Dake Middle School)
- **Pittsford/Eastview CMZ** (9-12 grade students at Pittsford Mendon and Sutherland High Schools)

Each of the above CMZs has approximately 50-80 Urban-Suburban students that may be affected by changes to fixed route services, according to estimates provided by RTS and the school districts.

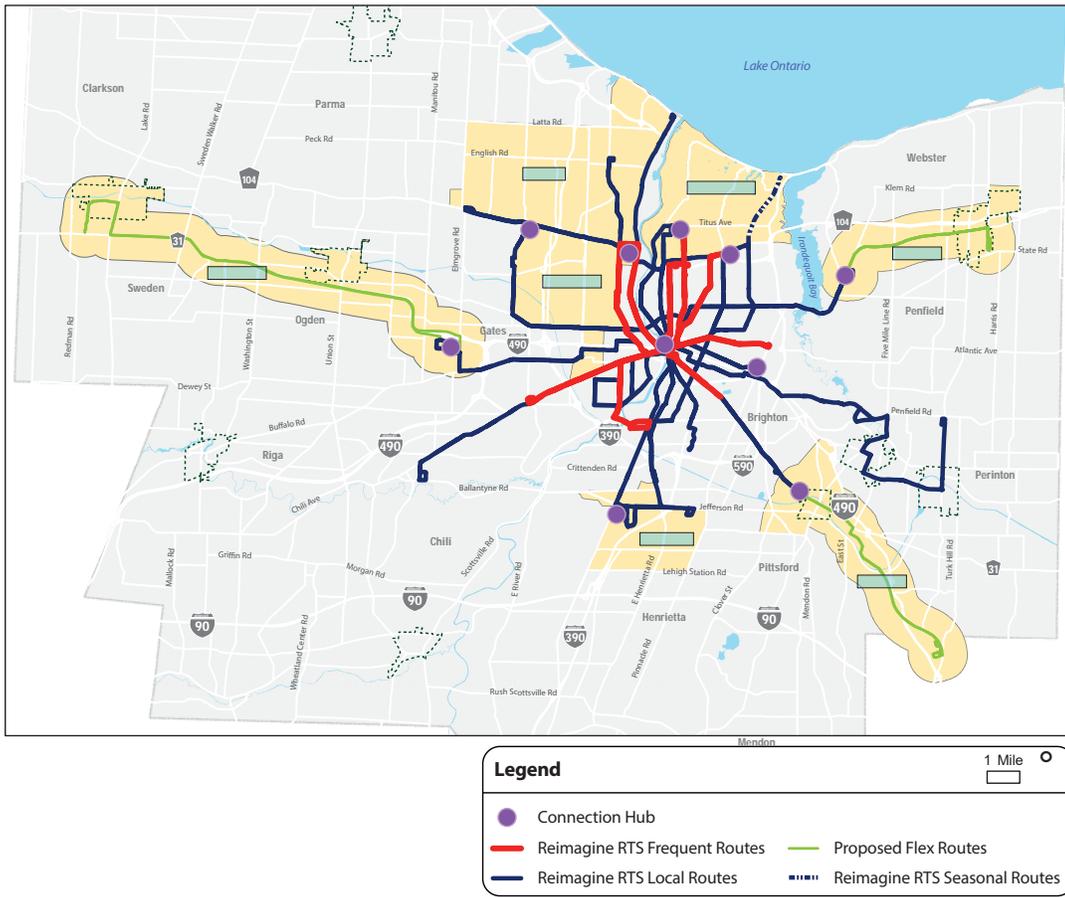
School district representatives participating in the public outreach stressed the importance of Urban-Suburban student transportation, particularly services that allow students to participate in after school activities, such as sports and clubs. A strong preference was stated for RTS direct-operated services, as well as consideration of student safety surrounding onboard transportation and transfers to fixed-route services at Connection Hubs.

It is noteworthy that other secondary school students could benefit from increased flexibility and availability of mobility options in the CMZ.

For example, the availability of transit options for intra-zone travel to nearby neighborhoods and destinations could be of value to students involved in after school activities, part-time jobs, etc. The availability of a mobility option may reduce the need for certain students to drive to school, and/or can reduce burdens on families in providing pick-up and drop-off for their students.



Figure 2-1: Community Mobility Zones



**TABLE 2-1:  
CMZ TRAVEL MARKET NEEDS AND SUITABILITY OF  
EXISTING FIXED ROUTE SERVICE**

TRAVEL MARKET	KEY REQUIREMENTS	TIMES OF THE DAY	DAYS OF THE WEEK	HOW WELL IS THE MARKET SERVED TODAY
<b>Traditional Central Commuters</b>	<ul style="list-style-type: none"> <li>Predictable peak period travel</li> <li>Seamless and competitive trips to central city</li> <li>Park and Ride facilities, able to drive the last mile</li> <li>Guarenteed Ride Home options increase appeal</li> </ul>	AM/PM Peaks	Mon-Fri	★★★★
<b>Shift, Retail, Healthcare Workers</b>	<ul style="list-style-type: none"> <li>Work shifts outside traditional peaks</li> <li>Dispersed employment in retail, industrial, and medical complexes</li> </ul>	All Times	Weekdays & Weekends	★★
<b>Transit-Dependent Non-Work Trips</b>	<ul style="list-style-type: none"> <li>Access to range of shopping, healthcare, recreation, social</li> <li>Flexibility around non-traditional work schedules</li> </ul>	Mid-Day, Evenings, Weekends	Weekdays & Weekends	★★
<b>Seniors/ Disabled Community</b>	<ul style="list-style-type: none"> <li>Access to range of shopping, healthcare, recreation, social</li> <li>Door-to-door Access (limited mobility)</li> </ul>	Mid-day, some Weekend and Evenings	Weekdays & Weekends	★★
<b>School Pupils</b>	<ul style="list-style-type: none"> <li>AM/PM Transportation Bell Times</li> <li>Before/After School Activities</li> <li>Suitable for Independent Travel by Minors</li> </ul>	AM Peak, Late Afternoon, Evenings	Weekdays & Weekends	★★★
<b>University Students</b>	<ul style="list-style-type: none"> <li>Peak, mid-day, and evening travel around class schedules</li> <li>Commuter and resident student needs</li> <li>Off-campus housing, services, and emplyments</li> </ul>	All Hours	Weekdays & Weekends	★★★

## 2.3 Brockport CMZ

### Overview

The Brockport CMZ will provide service in areas affected by the proposed discontinuation of the current Route 104 Brockport in the towns of Ogden and Sweden and the villages of Brockport and Spencerport.

This proposed 30.56 square-mile Zone, the largest of the CMZs, focuses on the relatively more populated areas north of NY Route 31. This zone will provide an important link between Rochester and the College at Brockport, State University of New York campus (SUNY Brockport) through a transfer to the fixed route network at a Connection Hub located at the Rochester Tech Park in the Town of Gates.

The CMZ has an estimated population of 26,982, and a median household income of \$61,853.

### User Groups Identified

- Brockport School District Urban-Suburban students
- College at Brockport students, faculty, and staff
- Employees at Bonduelle and Sunking, Inc.
- Senior citizens
- Individuals served by Lifetime Assistance

### Key Stakeholder Issues and Concerns

- Safety, security and accountability
  - Sixth through twelfth grade students using mobility options to connect to fixed-route or those waiting for a connection at the Rochester Tech Park.
  - The College at Brockport students traveling to their homes in the city of Rochester after evening classes.
- Ability of Urban-Suburban students to access extracurricular activities based on availability of return transportation to Rochester.
- Affordability and availability of mobility options based on partnerships with TNCs for SUNY Brockport students.
- Expectation of paratransit customers to have curb-to-curb service and in some cases, dedicated runs.
- Service for residents who currently have to walk down Owens Road.

### Key Origins and Destinations

- The College at Brockport
- Brockport Central School District facilities, including Brockport High School and A.D. Oliver Middle School.
- Frances Apartments, Woodlands Apartments and retail on Owens Road
- Lifetime Assistance
- Sweden Senior Center
- Bonduelle and Sunking, Inc.

## 2.4 Greece CMZ

### Overview

The Greece Community Mobility Zone will provide service to residents and businesses in the town of Greece where 40-foot bus service has been determined to be infeasible.

The 24.35 square-mile CMZ is bisected by the I-390 expressway and encompasses major retail locations such as The Mall at Greece Ridge and Northgate Plaza, as well as a site of higher education in Bryant & Stratton College. Future Connection Hubs are envisioned near The Mall at Greece Ridge and the Eastman Business Park (serving both the Greece and Lexington Avenue CMZs).

The Greece CMZ has an estimated population of 76,664, and a median household income of \$54,332.

### User Groups Identified

- Transit-dependent households
- Service/retail workers
- Senior citizens
- Elderly population
- Secondary students

### Key Stakeholder Issues and Concerns

- Access to local services and employment for transit dependent residential populations.
- Mobility for elderly and persons with disabilities.
- Service and retail employment transportation

### Key Origins and Destinations

- Affinity Orchard Place Apartments
- Bryant & Stratton College
- Kodak Park
- Northgate Plaza
- Retail/Shopping Centers (Walmart, Wegmans, etc.)
- Ontario Beach/Charlotte Recreation Facilities
- The Mall at Greece Ridge
- Ridge Road Retail and Service Corridor
- K-12 Schools

## 2.5 Henrietta CMZ

### Overview

The Henrietta CMZ will provide connections beyond the fixed-route network to destinations within the Town of Henrietta. The Henrietta Community Mobility Zone (CMZ) is a 19.57 square-mile area located south of the City of Rochester.

The CMZ is bisected by the I-390 expressway, Jefferson Road (Route 252) and West Henrietta Road (Route 15) and is home to regional retail destinations, such as Marketplace Mall, Southtown Plaza, a Walmart Supercenter and Frontier Commons.

Henrietta CMZ has 34,277 residents and 16,020 employees. The median household income in the Henrietta CMZ is \$52,723.

Fixed route bus service is currently concentrated along the Jefferson Road corridor and around Marketplace Mall, located in the center of the CMZ. A Connection Hub is envisioned in the vicinity of Marketplace Mall.

### User Groups Identified

- RIT and MCC students
- Marketplace Mall customers and employees
- Veterans (including service to future VA outpatient facility near Calkins Rd.)
- Deaf and Hard-of-Hearing Communities
- Affordable housing residents and individuals with developmental disabilities

### Key Stakeholder Issues and Concerns

- Dissatisfaction of Marketplace Mall employees with frequency and hours of operation of current service
- Safety and security of MCC/RIT students waiting at the Connection Hub
- Perception that Marketplace Mall is not a frequent destination for RIT students (Monroe Community College was identified as a potential alternative Connection Hub location)
- Support for a flex route service loop
- Support for differentiated pricing depending on trip destinations
- Accessibility of mobility options for Deaf and Hard-of-Hearing Communities
- Need to fill RIT shuttle service gaps

### Key Origins and Destinations

- Calkins Road: Future VA facility, municipal offices, library, and apartments
- Lehigh Road development, student housing and community path
- East Henrietta Road south of Jefferson Road
- Marketplace Mall and surrounding retail cluster, both for shopping and as a service sector employment hub

## 2.6 Irondequoit CMZ

### Overview

The Irondequoit CMZ is proposed to better serve areas in which fixed-route service is recommended to be discontinued as part of the Reimagine RTS plan.

The 12.12 square-mile area encompasses or abuts some of the region's most popular recreational and cultural opportunities, including Ontario Beach, Seneca Park Zoo, Durand Eastman County Park and Seabreeze Amusement Park.

Retail is centered on the Ridge Road corridor to the north, and is home to major employers such as Rochester Regional Health. The Zone has a population of 33,213 and a median household income of \$59,013.

Connections to fixed-route service is envisioned at Connection Hubs near Irondequoit Plaza and Skyview on the Ridge in southern Irondequoit.

### User Groups Identified

- Students
- Seniors
- Healthcare patients
- Transit users by choice

### Key Stakeholder Issues and Concerns

- Municipal funding of enhanced service in area
- Quality of amenities at Irondequoit Plaza Connection Hub
- Serving Urban-Suburban Students
- Access to healthcare providers
- Access to water recreation opportunities on Lake Ontario and Irondequoit Bay
- Improved mobility for senior and student populations

### Key Origins and Destinations

- Wegmans
- Schools
- Town Campus/library
- East Ridge corridor
- Irondequoit Plaza
- Pattonwood Drive
- Seabreeze Amusement Park
- Bay Park
- Skyview on the Ridge

## 2.7 Lexington Avenue CMZ

### Overview

The Lexington Avenue Community Mobility Zone represents a mostly industrial area within the City of Rochester.

The Zone is roughly bounded by Ridge Road West to the north, Dewey Avenue to the east, Lyell Avenue (New York State Route 31) to the south and Long Pond Road to the west. The Zone partially overlaps with the Greece CMZ along Ridge Road West.

At 8.89 square miles, the Lexington CMZ is the smallest Mobility Zone by area but is an employment destination for RTS customers. Kodak, LiDestri Foods and other major employers are located within the Zone, as well as community services such as FoodLink.

The Zone has an estimated population of 27,020 and a median household income of \$37,441.

Connection Hubs are envisioned near the Mall at Greece Ridge and Eastman Business Park (serving both the Greece and Lexington Avenue CMZs).

### User Groups Identified

- Industrial/manufacturing employees
- Retail/service sector employees
- Low income households
- Secondary students

### Key Stakeholder Issues and Concerns

- Industrial/manufacturing/wholesale employers – workforce transportation.
- Retail employment – access during off-peak shift start/end times.
- Low income households – access to employment, education, and social services.

### Key Origins and Destinations

- Kodak Park
- LiDestri Foods, Love Beets, and other light industrial employers
- General Motors
- Canal Ponds Industrial Park
- Community services, e.g. FoodLink
- Edison Technical high School
- Eastman Reserve mixed-use development
- The Mall at Greece Ridge
- Retail Employers

## 2.8 Pittsford/Eastview CMZ

### Overview

The Pittsford/Eastview CMZ contains the New York Route 96 corridor between Eastview Mall and the Town of Pittsford, with a planned Connection Hub proposed to be located at Concentrix in Pittsford.

The CMZ has a population of 29,307 and a median income of \$103,745. The zone encompasses Nazareth College and St. John Fisher College, as well as the Cloverwood Senior Living complex.

### User Groups Identified

- Urban-Suburban students
- St. John Fisher College and Nazareth College students and employees
- Seniors
- Eastview Mall employees and customers

### Key Stakeholder Issues and Concerns

- Safety and security of Urban-Suburban students
- Access for college students and employees to key destinations
- Access for employees commuting to Eastview Mall

### Key Origins and Destinations

- St. John Fisher College/Nazareth College
- Eastview Mall
- Cloverwood Senior Living
- YMCA at Clover Street and Jefferson Road
- Concentrix Plaza
- Pittsford Village Center
- Pittsford Plaza

## 2.9 Webster CMZ

### Overview

The Webster Community Mobility Zone provides connections to the fixed-route system through a Connection Hub at Baytowne Plaza in Penfield.

The 10.8 square-mile Zone has important retail and commercial corridors along Ridge Road, in the village center and is home to a Xerox facility. The Zone has a population of 21,936 with a median household income of \$60,339.

### User Groups Identified

- Subsidized housing residents
- Park & Ride commuters
- Seniors
- Incoming healthcare workers

### Key Stakeholder Issues and Concerns

- Access to groceries and other key destinations for subsidized housing residents
- Misalignment of bus hours of operation and healthcare worker shifts
- Affordability of new mobility options for subsidized housing residents
- Coordination with Town of Webster on state-funded Ridge Road corridor enhancements
- Need for curb-to-curb service because of area's low walkability
- Recruitment of businesses to Xerox Campus
- Encouragement of shoppers to go downtown

### Key Origins and Destinations

- Webster Square Park & Ride
- Village Center
- Phillips Village
- Xerox Campus
- Hill Haven on Empire Boulevard
- Basket Road
- Apartment complexes on Holt Road and Hard Road

## 3. Mobility Modes Considered

### 3.1 Introduction

This section describes mobility option service design alternatives for consideration in each of the Community Mobility Zones.

Table 3-1 presents a summary of the service design alternatives and their attributes for each of the following:

1. Personal Mobility on Demand (PMOD)
2. Scheduled Microtransit
3. On Demand Microtransit
4. Flex Route Microtransit
5. RTS Access Plus – Comingling eligible ADA registrants and general public
6. Vehicle Sharing





**TABLE 3-1:  
MOBILITY MODES CONSIDERED**

SERVICE ALTERNATIVE	SERVICE DESCRIPTION	VEHICLE TYPES	POTENTIAL PROVIDERS	LEVEL OF SERVICE	CUSTOMER ACCESS OPTIONS	FINANCIAL MODEL/ STRUCTURE
<b>Personal Mobility on Demand (PMOD)</b>	Low-capacity - individuals or small groups. On demand (next vehicle available) +/- or advanced booked	sedans, minivans	Taxis, transportation Network Companies (TNCs)	Flexible: commuter peak hrs., late night "owl" service, 24/7. Typically 15 to 30 minute response time.	Reservations required: app based and/or phone reservations/call center	Typically subsidized taxi/TNC service. May use pricing policy to influence travel behavior and/or destinations.
<b>Scheduled Microtransit</b>	Moderate capacity - fixed route, set schedule (shuttles, circulators)	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Primarily as feeders. Typically 30 to 60 minute schedule frequency.	Walk-up service. No booking. Enhanced customer information.	Traditional service contracting (VRHs), sponsorship, advertising revenues. May incorporate on-board fare collection.
<b>Flex Route Microtransit</b>	Moderate capacity, dynamic itinerary.	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Dynamic in response to demand. Typically 30 to 60 minute response time.	Reservations required: app based and/or phone reservations/call center	Traditional service contracting (VRHs), sponsorship, advertising revenues. Fares may be integrated into RTS fare structure.
<b>On Demand Microtransit</b>	Moderate capacity - fixed route, set schedule (shuttles, circulators) - with deviation up to pre-determined distance/ parameter	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Primarily as feeders. Typically 30 to 60 minute schedule frequency.	Walk-up service, no booking - for fixed route/ schedule. Reservations, app based for route deviated requests.	Traditional service contracting (VRHs), sponsorship, advertising revenues. May incorporate on-board fare collection.
<b>RTS Access Plus: Co-Mingle ADA and General Public</b>	Moderate capacity, dynamic itinerary.	vans, shuttle buses/ purpose built vehicles	Private, for-profit and/or RTS	Flexible: span & frequency range from defined periods (commuter peaks) to RTS operating hrs. Dynamic in response to demand. Typically 30 to 60 minute response time.	Reservations required: app based and/or phone reservations/call center	Traditional service contracting (VRHs), sponsorship, advertising revenues. Fares may be integrated into RTS fare structure.
<b>Vehicle Sharing (compliment to other service alternatives)</b>	Bike share, car share, and ride share services - expand reach of network at strategic access points	bicycles, electric scooters, sedans	Private, 3rd party vendors.	Flexible. Typically available 24/7.	Typically walk-up service. May be reservation and/or subscription based.	Typically determined market rates.

## 3.2 Personal Mobility on Demand (PMOD) Service

### Service Description

PMOD is a low-capacity service designed for individuals and small groups (up to five persons) traveling together or between various origins and destinations located along a dynamic itinerary formed in response to customer reservations for “next vehicle available” and “advance booking” travel. These services also are referred to as: shared-ride taxi (SRT); general public dial-a-ride; personal demand-response, car service, and paratransit, among others.

### Service Design Variations

PMOD is potentially suited to area-wide, zone-based, or corridor coverage operating either as a feeder service to RTS transit lines and major employment districts; or dynamic routed and scheduled in response to customer demands.



### Industry examples include:

**Tampa’s HyperLINK<sup>1</sup>** service is designed to “extend the footprint” of the HART fixed route network with subsidized shared rides to local bus stops within defined zones for a flat \$1.00 fare. Additionally, point-to-point service anywhere within the zone is offered for a \$3.00 flat fare. HART encourages the use of a branded mobile app developed by Transdev for reservations and fare payment; however, traditional

<sup>1</sup> As a result of HART’s contractor Transdev, notifying HART of their requirement for twice the rate for the provision of service, HART is reconsidering options for the continuation of this service.

telephone reservations and cash payment of fares are accepted as well.

**Detroit Department of Transportation (DDOT)** partners with Lyft to offer late night first/last mile service along the outer 5.7 miles of the 9.2-mile Woodward Avenue corridor, one of Detroit’s busiest transit corridors (Line 53) and one of just three lines in the system with late night service. Additionally, the inner 3.5 miles east of Grand Boulevard to the Detroit riverfront is covered by the Q Line (Phase 1 LRT). The Woodward 2 Work zone extends northwest from Grand Boulevard to the State Fair Transit Center near Eight-Mile Road. DDOT offers a \$7 credit to customers using Lyft for access to and posted bus stops between the hours of midnight and 5 am. Line 53 operates hourly owl service. Non-smartphone users can call Lyft Concierge, and the unbanked can use prepaid gift cards (minimum \$25 balance).

**Livermore-Amador Valley Transit Authority**, d/b/a Wheels, partnered with DeSoto Cab, Lyft and Uber to offer subsidized local rides in the City of Dublin through the GO Dublin program. Wheels pays half the cost of a one-way ride up to a maximum of \$5 for trips that begin and end in the city. Customers book trips using the provider’s app and a promo fare code to obtain the discount for a one-way ride anywhere within 15-square mile city of 55,000 residents.

In eastern LA County, the City of Monrovia partners with Lyft and LimeBike to offer subsidized Lyft rides and dockless bike sharing as parts of its *GoMonrovia*<sup>7</sup> initiative. Customers use the Lyft app with a promo code for a \$0.50 flat fare for a one-way ride anywhere within 14-square mile city of 38,000 residents.

### Vehicle Types

Small vehicles ranging from sedans to SUVs and minivans with seating capacity for up to five persons, excluding the operator. Most vehicles are owner-

operated, although some taxis are leased. Private companies Uber and Lyft offer branded service variations based partly on vehicle size and model. Other custom vehicles include electric Gem Carts, and “e-tuk” electric rickshaws. LimeBikes is developing a two-seat vehicle called a “transit pod” for potential use in car share or e-hail mode.

Potential Providers – Mostly private for-profit companies regulated either as taxicabs or as transportation network / rideshare companies (TNC). Notable distinctions between taxis and TNC rideshare services include:

- Taxis are designated using exterior markings on the vehicles; TNCs are typically unmarked; and
- Taxis may be hailed curbside; TNCs may be “e-hailed” only, meaning no curbside hailing.

### Level of Service

PMOD span and frequency/response times can include defined time periods (e.g., commuter peaks; late night “owl” service when RTS is not operating) to around-the-clock “24/7” service.

Providers commonly target 15-30 minutes for “next vehicle available” service; however, actual times vary based on the number of vehicles in service at a given time, travel demand by time of day, and travel itineraries of individual customers. These are the same parameters that impact traditional complementary paratransit services.

Vehicle routing and scheduling occurs dynamically in response to the demand for service. Uber and Lyft use “surge pricing” to level out demand, with peak surcharges ranging from two to nine times the base fare. Some sponsoring agencies do not allow surge pricing.

### Customer Access Options

Reservations are required for most trips for either “next vehicle available” and “advance booking” basis. As noted earlier, private services emphasize the use of a branded mobile app available in iOS and Android phones and tablets. Public services also allow traditional telephone reservations to accommodate customers without smart mobile devices.

### Financial Model / Fare Structure

The prevailing financial model typically involves subsidization of taxi /TNC services for targeted or area-wide service. Many transit systems choose to offer a flat subsidy per one-way trip taken on a participating taxi or TNC service. Most defer to the provider’s distance-based fare structure, and pay the subsidy after a customer fare is paid, up to a capped maximum amount; after which the customer is responsible for any cost above the cap. For example, the customer might pay the first \$3 of the cost of a ride; the transit agency or other sponsor might pay up to \$12 to a cap of \$15; and the customer might pay any amount over \$15. Flat fares also may be used.

### 3.3 Microtransit –Scheduled, Flexible and On Demand; RTS Access Plus

#### Service Description

Microtransit provides moderate capacity service designed for individuals traveling between various origins and destinations located along a fixed route operating on set schedules. Microtransit is sometimes referred to as shuttles; circulators, and minibus routes. The term “microtransit” initially described private technology-oriented companies entering the passenger transportation industry; but now include comparable services operated by transit agencies and other non-profit entities.



#### Service Design Variations

Microtransit is potentially suited to area-wide, zone-based, or corridor coverage operating either as a feeder service to RTS transit lines and major

employment districts; or dynamic routed and scheduled in response to customer demands. Select examples include:

### Groveport Rickenbacker Employee Access Transit

(GREAT) – COTA (Columbus, OH) collaborated with the City of Groveport and Village of Obetz to implement a three-route first-last mile shuttle service linking the end of COTA Lines 22 and 24 (London-Groveport Road & Alum Creek Drive) to various businesses located throughout the Rickenbacker Industrial Park. Again, shuttle service is free and customer information is integrated in COTA system information. Groveport operates the service running on fixed weekday schedules and flexible weeknight and weekend schedules.

### Transit Corridor Coverage

Some transit systems (e.g., AC Transit, OCTA) deploy On Demand Microtransit to replace or avoid adding marginal fixed route service in lower demand corridors. Service is structured to encourage travel between posted stops to achieve moderate service productivity (8 – 12 boardings per hour); however, travel between a posted stop and any point within a defined zone (i.e., a specific CMZ) may be allowed as well.

In the suburban Oakland (CA) cities of Castro Valley and Newark, **AC Transit** replaced marginal fixed routes with On Demand Microtransit operated by AC Transit employees. Customers book trips via a personal account portal powered by Google Translate and accessed on the AC Transit website. The cost to ride Flex is the same as any other AC Transit local service. Discounted Clipper fares and day passes apply. AC Transit, which directly operates AC Flex microtransit service, uses a website-based customer account portal.

### Zone Coverage

With this approach, Microtransit provides flexible coverage within a defined service area or jurisdiction.

In the suburban Sacramento cities of Citrus Heights, Antelope and Orangevale, **Regional Transit** (RT) operates SmaRT Ride directly with RT employees. Customers book trips using a branded Microtransit mobile app supported by Transloc. On-line reservations also are accepted on the Transloc website. Customers also track their bus in real-time

and receive texted bus arrival and destination arrival alerts. Travel may be anywhere within defined zone boundaries, including connections to the Folsom Light Rail Station.



### Destination Coverage

With this approach, Microtransit provides On Demand Microtransit service between residential areas and commercial districts, employment and regional centers.

### RTS Access Plus: Co-Mingling of ADA Paratransit and General Public

A variation on microtransit delivery scenarios is co-mingling ADA paratransit registrants with the general public. A hypothetical example would be RTS Access services providing transportation to the general public in a CMZ if trip requests and travel times are compatible, as coordinated through the RTS Access operations/dispatch center.

### Vehicle Type

Microtransit vehicle type ranges from large SUVs and vans, to shuttle buses and custom vehicles with seating capacity for typically 6-12 passengers.

### Potential Service Providers

There is a diverse array of potential service providers for microtransit, including both agency direct operated and contracted services. Contract service options include: a growing number of startup enterprises (e.g., Hopper); more established service contractors (e.g., Ford Mobility, Transdev); traditional transit contract operators (e.g., First Transit, MV); regional charter operators; taxi/TNC companies. RTS would need to acquire small vehicles and may need to amend the collective bargaining agreement to operate microtransit service directly.

## Level of Service

Span and frequency models range from defined time periods (e.g., commuter peaks, nights), to coverage of full system operating hours as a stand-alone solution to an area’s mobility needs.

## Customer Access Options

- **Scheduled:** Operating on a fixed route, fixed-scheduled basis, customers walk-up to access the service, requires no booking. Enhanced customer information, including scheduled and actual vehicle location are available via mobile app, website, and bus.
- **On Demand:** Reservations are required for most trips for either “next vehicle available” and “advance booking” basis. As noted earlier, private services emphasize the use of a branded mobile app available in iOS and Android phones and tablets. Public services also allow traditional telephone reservations to accommodate customers without smart mobile devices.
- **Flex Route (hybrid):** Operating on a set route with ‘some’ designed scheduled stop locations supplemented by deviating off the route within a prescribed buffer zone to respond to customer requests.

## Financial Model / Fare Structure

Financial models for microtransit services include traditional service contracting with compensation based on revenue hours operated; third-party revenue guarantees; sponsorship; advertising revenues. Most systems avoid onboard fare collection from customers.

## 3.4 Vehicle Sharing

### Service Description

Vehicle sharing includes bike share and car share services designed to expand the reach of the Reimagine RTS network at strategic access points including park-ride lots and transit hubs.

### Service Design Variations

Bike Sharing - Short-term bike rental, usually for individual periods of an hour or less over the course of a membership (periods which can range from a single

ride, to several days, to an annual membership). Information technology-enabled public bike sharing provides real-time information about the location and demand for bikes at docking stations throughout a community. The City of Rochester currently has a bike sharing program, Pace, located within the central city and nearby urban neighborhoods.

In Milwaukee, MCTS partners with local non-profit BublR to locate bike stations along bus routes and co-brand mobile apps to make bike sharing more readily available to bus customers. MCTS markets bike sharing as an added convenience for customers who use the bike racks on MCTS buses, and as a seamless expansion of the reach of the fixed route network. The BublR app is accessed via an RFID sticker applied to the MCTS M-Card.

In Pittsburgh, the **Port Authority of Allegheny County** partners with Healthy Ride, Pittsburgh’s non-profit bike sharing program, to make short-term bike sharing available as a FLM service for PAT customers with a Connect Card. Transit customers with a Connect Card link to a Healthy Ride account at any Healthy Ride kiosk to obtain limited free use of a bike for up to 15 minutes. A charge of \$2 per half-hour is charged for rides over 15 minutes. Healthy Ride has 175 stations with 700 bikes in targeted sections of metro Pittsburgh.

The suburban city of **Monrovia** in eastern Los Angeles County partnered with LimeBike to launch “GoMonrovia” offering residents a new bikeshare program as part of a mobility on demand initiative. Over 200 bicycles are available for rent at various locations around the City, including the Metro Gold Line LRT station and the downtown retail area. LimeBike costs \$1.00 per 30 minutes of use, or via a monthly membership.



Electric Scooter Sharing is similar to bike sharing, using electric scooters operating in a dockless mode.

Service is accessed and paid for using a mobile app. LimeBike provides electric scooters powered by a 250-watt motor with a 20-mile range and 14.8 mph maximum speed. The app also contains a battery monitoring function. LimeBike experience in Austin, TX and San Francisco, CA speaks to the need for regulation to address scooter parking, sidewalk operation, and other issues.

Car Sharing provides members with access to an automobile to complete transit trips that cannot be made on the Reimagine RTS network. Car sharing services offer several models, including:

- Round-trip, which requires the user to borrow and return the vehicle at the same location;
- Free-floating, which allows the user to pick up the vehicle at one location and drop it off at a different location.
- Peer-to-peer, which allows individual owners to rent their vehicle to other car share program members.

In Seattle, **King County Metro** has four parking spaces at its Northgate Park-Ride facility set aside for free-floating car share vehicles operating as Car2go and ReachNow. The pilot project was undertaken because Northgate's frequent all-day transit service attracts customers throughout the day and evening. Parking spaces fill early and usually remain full all day, yet customers continue to need to get there throughout the day. While many customers arrive on foot, by bike, and by transferring from other buses, other customers prefer to drive and park. Metro decided to test the use of designated car share spaces at Northgate so that some spaces could more easily serve several different customers over the course of the day. Northgate also has the only Metro-owned park & ride lots within the current service area of the two-current free-floating car share operators in Seattle, (Car2Go and ReachNow).

### 3.5 Industry Experience – Peer Agency Mobility Case Studies

As the mobility landscape continues to evolve, connected travelers, continued advancements in transportation technologies, and private sector involvement present unprecedented opportunities for public transportation improvements. In recent years, concepts such as microtransit and mobility-on-demand have helped agencies fill first and last mile gaps by developing and integrating unconventional modes into their services, engaging the private sector in the form of transportation network companies (TNCs), car-share, bike-share and other modes as alternative to private vehicles. However, while transit agencies continue to experiment with new business models, suppliers, and technologies to extend service into lower-density areas, challenges related to providing cost-effective, efficient, and equitable service to all people remain.

Given such opportunities in the area of innovative service delivery, RTS is examining immediate and actionable strategies to extend its service delivery beyond its Reimagine RTS fixed route bus network and mitigate any impact of service changes in seven identified community mobility zones (CMZs). Strategies are sought for travelers who could potentially take transit, but whose origin or destination cannot be conveniently accessed from the nearest available transit service options. In support of this initiative, this report presents examples of transit agency initiatives related to innovative service delivery models, in the United States and Canada. Lessons learned from these experiences will help to assess how different services can be coordinated and integrated with RTS's services.

While other contexts for innovative service delivery exist, we have summarized examples of such services from other agencies as described in Table 3-2 given their applicability to RTS' needs in general and mobility solutions in one or more of the CMZs.

**TABLE 3-2:  
SUMMARY OF SELECT INDUSTRY EXAMPLES OF MOBILITY OPTIONS**

SERVICE TYPE	DESCRIPTION	EXAMPLE APPLICATIONS
<p><b>Local Mobility</b></p>	<ul style="list-style-type: none"> <li>Includes mobility options customized to local conditions to increase ridership (e.g., local shuttles).</li> <li>Provides local travel in suburban and urban neighborhoods where agency services may not be available or may have limited availability.</li> </ul>	<ul style="list-style-type: none"> <li>OCTA Project V program in San Clemente, CA</li> <li>AC Flex Operated by AC Transit</li> <li>Direct Connect Service operated by PSTA</li> <li>HyperLINK program by HART- Tampa</li> <li>NeighborLink Service- LYNX-Orlando</li> <li>Uber Pool, Express Pool and WAV</li> </ul>
<p><b>Commuter Services</b></p>	<ul style="list-style-type: none"> <li>Includes connectivity to express services and/or park &amp; ride facilities. Connects customers to other transit services provided by the agency, e.g., to and from transit centers or park and ride facilities.</li> </ul>	<ul style="list-style-type: none"> <li>Altamonte Springs, suburban Orlando, FL</li> </ul>
<p><b>Destination-Based</b></p>	<ul style="list-style-type: none"> <li>Includes services designed to serve specific types of destinations such as commercial/ retail, medical, education and recreation.</li> </ul>	<ul style="list-style-type: none"> <li>Groveport Rickenbacker Employee Access Transit (GREAT)</li> <li>New Albany SmartRide (3 routes connecting park and ride to employers in the International Business Park).</li> <li>Rosemont entertainment circulator from suburban Chicago</li> <li>USC Safe Ride program</li> <li>Bishop Ranch in San Ramon, CA</li> </ul>

## 3.6 Local Mobility Case Studies

### San Clemente, CA (OCTA Project V Program)

Project V, part of Measure M2 initiative, establishes a process for local communities to develop their own transit services that complement the regional transit services. When Orange County Transportation Authority (OCTA) decided to eliminate two of its unproductive routes (191 and 193) due to low ridership in the City of San Clemente, the City and OCTA decided to partner with Lyft to provide on demand services to customers dependent on those routes.

In October 2016, City Council approved a \$900,000 contract with Lyft to provide on demand service to customers within the City limits. The contract is funded by an OCTA grant. Overall, OCTA pays 90% of operating deficit and the City pays local match of 10%. This contract will allow customers affected by discontinued routes to travel locally, travel to another OCTA route or to regional Metrolink (rail) service. The contract establishes the following guidelines for trip payments

- Passenger pays the first \$2.00 of the regular Lyft fare
- City pays remainder up to a maximum of \$11.00 (up to \$9.00 subsidy)
- Customer is responsible for any amount above \$11.00

Customers can use the discount code SCRIDES when booking rides.

Given potential difficulties of seniors and customers with disabilities to take services offered by Lyft vehicles and operators, customers eligible for OCTA Access service can request services from San Clemente's Senior Mobility Program for local trips. The program offers free on demand fixed-route service for shopping and senior center trips.

### AC Flex – Operated by AC Transit

In early 2017, AC Transit, the transit service operator in Alameda and Contra Costa counties launched a flexible service in the neighborhoods of Newark and Castro Valley (also available in Union City and Fremont), areas that had low transit demand. The service is designed as an alternative to fixed route service. As part of the service the AC Transit operates

12-passenger buses equipped with wheelchair access, fareboxes and Clipper Card readers.

All trips must begin and end within the flex service area around Line 275. AC Transit suspended operation of Line 275 from March 2017 through March 2018 to evaluate the service. The service area also includes two BART rail stations Implemented as one-call-one-click concept, the service allows trip booking using a web application (smartphone, tablet, computer) anytime or through the call center during restricted hours, AC Transit recommends trips are booked 30 minutes in advance. Recurring trips may get booked up to 3 months in advance.

The trip booking platform is implemented using MobilityDR platform from Demand Trans. Operators gets turn-by-turn direction on Flex vehicles. Customers can also subscribe to receive text or email alerts when their vehicles are 10 minutes away.

### Direct Connect Service by Pinellas Suncoast Transit Authority (PSTA)

In 2016, PSTA launched a unique public private partnership program to enhance local mobility by partnering with Uber and United Taxi. This service is designed to address the county's sprawling population and service gaps that require customers to walk long distances to get to a bus stop. The service is designed such that:

- Customers can travel within a defined geographic service zone
- To or from designated stops within a zone

The service was primary designed to serve areas of PSTA where low ridership bus service was eliminated. Initially, the service was launched such that customers can use low cost Uber (Pinellas Park neighborhood) or United Taxi (Pinellas Park and East Lake neighborhoods). Based on the success of the program, PSTA has expanded the service to entire Pinellas County and now also partners with Lyft, however rides through Lyft are currently not offered. Often TNCs prefer to be exclusive partners with an agency.

PSTA service partners (now include Uber, United Taxi, Care Ride, and Wheelchair Transport) use app-based e-hailing platform. PSTA provides a discount of \$5.00 per trip. Customers pay an average of \$1.00. Customers can pay by bankcards or PayPal. On taxis,

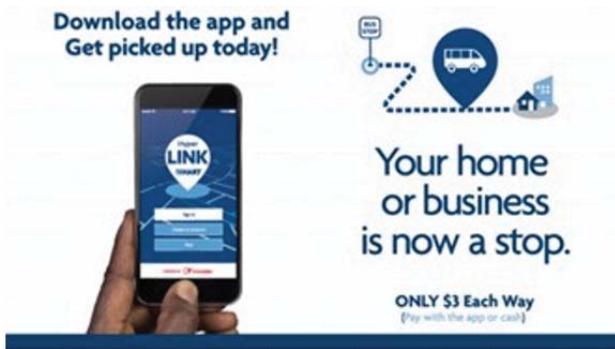
customers can also pay by cash.

### HyperLINK Program—Hillsborough Area Regional Transit (HART), Hillsborough County, FL



HART offers HyperLINK service to provide direct connections to bus stops in Brandon, Temple, Terrace and University Area neighborhoods. Designed as a shared ride service, this first and last mile solution

was launched in the University of South Florida area with \$1.2 million capital from Florida Department of Transportation (FDOT). The service is operated by Transdev who is paid \$10 per trip. Customers pay \$1 to connect to a designated HART stop or \$3 to connect to anywhere else in the service zone. Customers can pay by cash or credit cards.



Private business donors (led by TECO, a local electric utility) are funding the \$170,000 two-year leases for four Tesla Model X SUV vehicles. The program aims to expand using Tesla vehicles equipped with autonomous vehicle technology (initially will have “drivers” to ensure safety). Also, in addition to regular shuttle buses, one accessible MV-1 van from AM General is used to meet the needs of customers who may need accessible vehicles.



### NeighborLink –LYNX, Orlando, FL

LYNX offers a flex service called, NeighborLink (NL), for its customers living in low density areas that are underserved by its local bus system. LYNX has currently defined 13 NL routes and zones. Customers can use an app to book trips to travel anywhere within the zone or to and from a stop on a NL route. Similar to AC Flex, LYNX operates small vehicles branded for NL service.

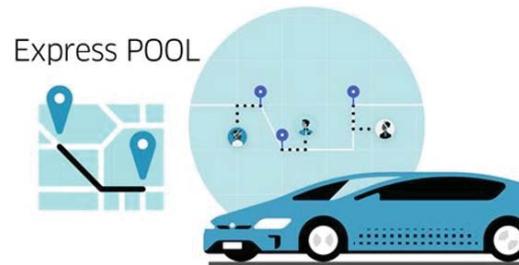
Customers pay fare similar to a regular fixed route service- \$2 for full fare and \$1 for reduced fare.

LYNX has been offering NeighborLink for several years, but it required booking customers two hours in advance until recently when an app was launched. LYNX has partnered with DoubleMap to provide the trip booking, dispatching platform. Additionally, DoubleMap provides real-time information and alerts to customers.

The service is operated by LYNX’s paratransit service (ACCESS) contractor, MV Transportation.

## 3.7 New Local Mobility Initiatives

### Uber Express Pool



Uber is currently piloting share ride service called express pool. Unlike Uber Pool that provides curb-to-curb service, Express Pool offers services to/ from designated stops. Express Pool is currently being piloted in Boston, San Francisco, D.C., L.A., Philadelphia, Denver, and San Diego.

## UberWAV and Uber Assist



Uber provides rides for persons with disabilities through branded service called Uber WAV and Uber Assist. WAV is offered for customers who may need wheelchair and Assist is offered for seniors and customers with disabilities who may require additional assistance. Customers can bring Personal Care Attendants (PCA)/ companions with them. Also, they are allowed to bring service animals. “Driver-partners” providing the service are certified by a third party in safely driving and assisting people with disabilities.

## 3.8 Commuter Services Case Studies

### Altamonte Springs – (suburban Orlando, FL)

While LYNX provides NeighborLink service as a Flex service in its service area, cities in the northern suburbs have teamed up to provide innovative service through public private partnership to compensate for any service gaps. The implementation was led by the City of Altamonte Springs and now is joined by the communities in Maitland, Longwood, Sanford and Lake Mary.

This is an example where cities leapfrogged a conventional transit option in favor of an innovative service delivery in partnership with the private sector. For several years since the early 2000s, Altamonte Springs partnered with LYNX and other local communities of Maitland, Longwood, and Cassleberry to develop a flexible service concept, called FlexBus that would involve 25+ fixed stations, where customers could walk up to and book a ride using kiosks and take trips or use their smartphones to book rides and board at fixed stations. After going through preliminary design and engineering process for over 10 years a pilot was launched in 2014. However, the pilot was not successful due to lack of definitive agreements among

partners on operations and maintenance and concerns about profitability of the service. Hence, FlexBus plans were cancelled and given Uber’s interest in the transit industry around the same time, Altamonte Springs decided to partner with them.

While creating a public private partnership with Uber, cities have created an organization called Municipal Mobility Working Group (MMWG) through an interlocal agreement. Main purpose of the service and agreement is to provide feeder service to Sun Rail stations, but customers can travel anywhere within city limits and areas that are part of the MMWG agreement. Cities currently contract with Uber, where cities pay 20% of the cost of travel within their city limits or for travel to a location within a city that is part of MMWG. Also, cities pay 25% of the cost of customers that begin or end at the SunRail commuter rail station.

## 3.9 Destination-Based Services Case Studies



### Rosemont Entertainment Circulator (PACE - Suburban Chicago)

Pace, the agency responsible for providing services in suburban Chicago, has launched a shuttle service between the CTA Blue Line subway station and nearby destinations in the Rosemont Entertainment District, Outlet Mall & Convention Center. The service is provided through partnership between Pace and the Village of Rosemont. Key landmarks serviced by the stop are Donald E. Stephens Convention Center, Fashion Outlets of Chicago, MP Financial Entertainment District and Rosemont CTA Station. The service is free and offered as Pace route 811. The route has designated pickup and drop-off locations

and the service is offered every 10-15 minutes per the following schedule:

- Mon-Thurs: 7:30 am – midnight
- Fri and Sat: 8:30 am - 3 am
- Sun: 11:30am - 9:30 pm

The service is operated for PACE under contract by MV Transportation.

### USC Safe Ride Program – Lyft Partnership (University of Southern California)



The University of Southern California provides free safe rides program through partnership with Lyft in the University Park neighborhood, nightly from 7:00pm-2:00am.

Students can board Lyft LINE vehicles from designated pickup and drop off locations within the University Park.

Ride credits for unlimited rides are applied to student accounts, however, excessive PrimeTime fares or tips are not covered by the ride credits.

The service allows student customers to bring a companion for free, this service is designed to supplement Campus Cruiser service and is operated as a pilot program from Jan 7-May 9, 2018.

### 3.10 State of Applicable Technologies

The rapid advancement of communications and scheduling technologies is a critical consideration when thinking about service design alternatives. Emerging technologies create new opportunities all the time, as the latest innovations are overtaken by even new innovations. To address this “moving target” issue directly, this section (building on previously prepared best practices and emerging technologies working papers) provides a snapshot of the current state of the technology as a baseline for inclusion in any proposed PMOD or microtransit services under consideration by RTS.

Use of mobile phone apps is spreading rapidly across the transit industry and is becoming indispensable in today’s market for transit/mobility services. All service design alternatives discussed assume the availability of either an RTS branded app or a branded app by a third-party service provider.

In addition to fare payment and vehicle tracking, trip booking is an essential feature of innovative first-last mile services designs.

Most widely distributed mobile apps allow customers to book trips for personal mobility, microtransit, and complementary paratransit services. RTS needs to assess the relative merits of incorporating trip booking capacity into its own branded app, or, relying on a third-party contractor to supply a separately branded app.

Third-party apps are available both as part of service delivery contracts (e.g., Chariot, Transdev, Uber, etc.) or as a stand-alone technology product (e.g., Transloc, Via). For example, Transloc offers a microtransit pilot program through which it provides software licenses for up to 10 vehicles for a period of three to six months; as well as service design guidance and performance monitoring in terms of key performance indicators such as ridership, productivity, and cost. Via is supporting Capital Metro’s Pickup service in Austin.

### 3.11 Conclusion

Transit agencies in the United States have been partnering with private sector such as TNCs, private microtransit companies, and real-time routing and dispatching software providers for many years now, particularly since the MoD Sandbox initiative was launched by USDOT. However, transit agencies are still assessing how best to position themselves in the shifting paradigm of mobility. Throughout this time agencies have experimented with replacing existing services, complementing current services, and adding new services.

Given most of the operating cost in transit industry is attributed to direct operator employment and vehicle ownership, agencies have experimented with a variety of models, where they 1) operate a service on their own; 2) use a contractor to run their services; or 3) partner with TNC or Taxis and subsidize trip cost. There is no clear conclusion on the best model and it varies largely on the type of service being provided

and the ridership demography.

Further, the transit industry is witnessing a rapidly changing world fueled by internet age technologies. The power of the internet allows agencies to plan and deploy technologies at a rapid pace even in situations when multiple service providers are involved. A number of technologies/solutions have either been field tested as part of a pilot program or have been widely deployed. Solutions such as Mobility as a Service, while still having very limited deployments, promise a great future given their ability to bring different providers together under a common service model.

New technologies and renewed customer demand have yet to significantly change the fundamental economics of personal mobility and transit. There are examples of mobility services operating on a self-sustaining basis; however, these mostly exist in areas where market economics, corporate underwriting or advertising revenues are uniquely available to avoid the need for public subsidy.





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## 4. Evaluation of Mobility Alternatives

Informed by an understanding of industry practice with next-generation mobility solutions combined with detailed profiles of the respective CMZs, stakeholder and RTS staff input, this section presents an evaluation of mobility solutions for each of the CMZs.

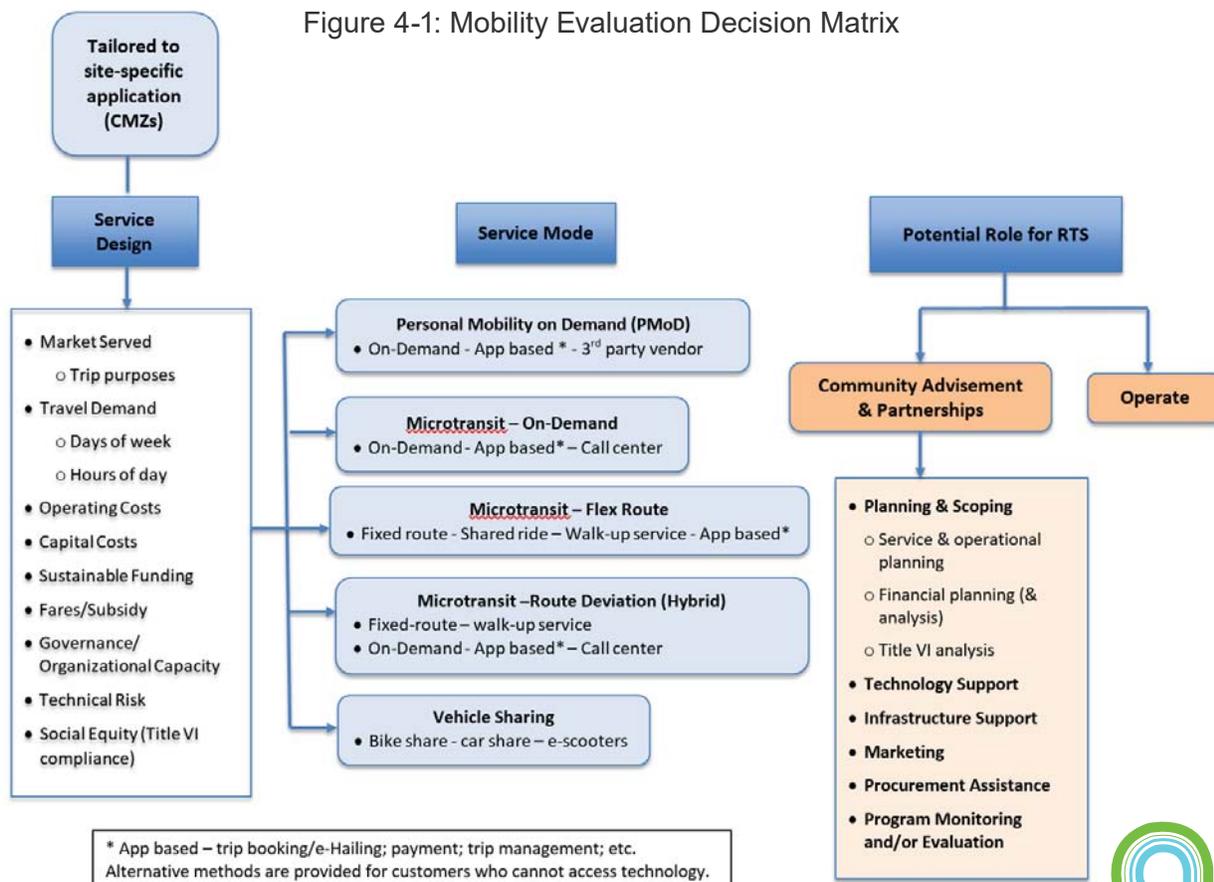
To evaluate the applicability of mobility solutions for each of the CMZs, several tools have been developed including:

- A Decision Framework
- A Service Mode Evaluation Framework
- A Ridership Estimation Tool

### 4.1 Mobility Evaluation Decision Framework

The Decision Framework is intended to guide both internal discussions as well as conversations with key external stakeholders. The Decision Matrix is shown in Figure 4-1.

The Decision Framework may be used to guide discussion where there is expressed interest in advancing a mobility service. Decisions affecting service design characteristics, service mode and a potential role for RTS may be determined based on consideration of the needs of a particular CMZ and the characteristics of the candidate service modes.



## 4.2 Service Mode Evaluation Framework

Figure 4-2 through 4-7 present Service Mode Evaluations for each of the CMZs. This evaluation framework inform on travel demand potential and specific evaluation criteria as described below.

### Mode Evaluation Matrix - Criteria Definitions and Assumptions

In consultation with RTS staff, the project team developed a set of evaluation criteria for each mode covering a range of factors that influence the applicability of each mode alternative to the CMZ.

Each of the criteria was weighted based on discussions with RTS as to the relative importance of the criteria in the overall evaluation process, as is shown below.

#### Partnership (P3) – 1x Weight

- Potential to foster partnerships with key constituencies that might include: the business community (major employers), health or education communities; municipality, etc.
- Partnerships may include financial contributions (cost sharing/cost allocation), assistance in marketing/promoting/branding, etc.

#### Ridership Potential – 2x Weight

- Ability/probability of generating ridership. May reflect transit dependent populations, specific market segments such as students, commuters, older adults, etc.

#### Net Cost of Service (subsidy per trip) – 3x Weight

- Outcome of preliminary cost estimates as reflected by cost per hour or subsidy per trip.

#### Service Quality – 3x Weight

- Impact on transit level of service in the CMZ – e.g., service frequency, response time, days of week, hours of day

#### Social Equity (Title VI Compliance) – 3x Weight

- Degree of impact (positive or negative) on Title VI populations
- Equitable access to transit/mobility services including those without a smart device (for trip planning, booking, mobile payment) and/or the unbanked. Need to provide alternate modes of access and payment.

#### Community Support – 2x Weight

- Degree to which mode accommodates additional identified needs of community and key stakeholder constituencies, beyond the core objective of serving current RTS customers.

#### Organizational Capacity – 2x Weight

- Ability of RTS to support the preferred/recommended approach. May include operations, finance, marketing, communications and branding, customer service, planning; IT, etc.

#### Sustainable Funding – 1x Weight

- Stable budgeting forecasts and funding sources
- Scalability of preferred/recommended approach responsive to available funding

#### Low Technical Risk – 1x Weight

- Implementation risk associated with start-up and operation of the mode
- Ability of RTS to support any prescribed technologies (i.e., e-hailing, trip discovery/planning, booking/request, tracking, mobile payment, data management)

## 4.3 Evaluation Matrix Scoring Criteria

As part of the evaluation, suggested scoring is provided whereby each of the criteria has been scored on a scale ranging from Positive to Negative in order to quantify an overall rating. The resulting ratings helped to inform on recommended strategies presented later in this document.

SCORE	DESCRIPTION
1	Positive Relationship
2	Somewhat Positive Relationship
3	Neutral/No Significant Change
4	Somewhat Negative Relationship
5	Negative Relationship

Table 4-1: Evaluation Matrix Scoring Criteria

## 4.4 Conclusion: Mode Evaluation Results for Community Mobility Zones

The following figures show the evaluation of each candidate mobility mode in each CMZ based on the evaluation criteria introduced above.

The analysis shows that two modes rank consistently high across the seven CMZs against the weighted evaluation criteria:

**Flex Route Microtransit** is the highest ranked multimodal alternative in the following CMZs:

- Brockport CMZ
- Pittsford/Eastview CMZ
- Webster CMZ

**On Demand Microtransit** is the highest ranked multimodal alternative in the following CMZs:

- Greece CMZ
- Henrietta CMZ
- Irondequoit CMZ
- Lexington CMZ

While not the highest ranked alternative in any CMZ, Personal Mobility on Demand scores consistently high against two criteria:

- Low Net Cost of Service (because the cost is based on service consumed, not service hours provided)

- Service Quality, because PMOD service provides curb-to-curb trips in response to customer demand. In other words, a high degree of convenience to accommodate customers where they want to travel, when they want to travel.

Both of these criteria receive a 3x weighting in the evaluation, making them two of the most important individual criteria.

Based on this evaluation, and in consideration of peer agency experience, PMOD is considered a complementary mode to supplement the two highest-ranking “core” microtransit modes.

The strategy for combining microtransit and PMOD in each CMZ is discussed in the following sections of this document.



FIGURE 4-2: BROCKPORT CMZ – SERVICE MODE EVALUATION

SERVICE MODE	TRAVEL DEMAND (RIDERS/HR.)				EVALUATION CRITERIA										WEIGHT
	10+ RIDERS/HOUR	7 TO 9 RIDERS/HOUR	4 TO 6 RIDERS/HOUR	<4 RIDERS/HOUR	1X	2X	3X	3X	3X	2X	2X	1X	1X		
					PARTNERSHIP (P3)	RIDERSHIP POTENTIAL	LOW NET COST OF SERVICE (SUBSIDY PER TRIP)	SERVICE QUALITY	SOCIAL EQUITY (TITLE VI COMPLIANCE)	COMMUNITY SUPPORT	ORGANIZATIONAL CAPACITY	SUSTAINABLE FUNDING	LOW TECHNICAL RISK	OVERALL RATING	
Personal Mobility on Demand				●	1	4	6	6	3	2	-2	1	2	23	
Scheduled Microtransit			●		1	2	0	3	3	4	4	2	1	20	
On Demand Microtransit				●	1	2	3	3	3	4	2	2	-1	19	
Flex Route Microtransit		●			1	4	3	6	3	4	2	2	-1	24	
RTS Access-Plus - co-mingling ADA & general public			●		1	2	0	3	6	4	2	2	-1	19	

Legend - Evaluation Criteria

- 2 Positive
- 1 Somewhat positive
- 0 Neutral/no significant change
- 1 Somewhat negative
- 2 Negative



FIGURE 4-3: GREECE – SERVICE MODE EVALUATION

SERVICE MODE	TRAVEL DEMAND (RIDERS/HR.)				EVALUATION CRITERIA										WEIGHT
	10+ RIDERS/HOUR	7 TO 9 RIDERS/HOUR	4 TO 6 RIDERS/HOUR	<4 RIDERS/HOUR	1X	2X	3X	3X	3X	2X	2X	1X	1X		
					PARTNERSHIP (P3)	RIDERSHIP POTENTIAL	LOW NET COST OF SERVICE (SUBSIDY PER TRIP)	SERVICE QUALITY	SOCIAL EQUITY (TITLE VI COMPLIANCE)	COMMUNITY SUPPORT	ORGANIZATIONAL CAPACITY	SUSTAINABLE FUNDING	LOW TECHNICAL RISK		
Personal Mobility on Demand				●	1	4	6	6	3	2	-2	1	2	23	
Scheduled Microtransit			●		1	2	-3	3	3	2	4	2	1	15	
On Demand Microtransit			●		1	4	3	6	3	4	2	2	-1	24	
Flex Route Microtransit			●		1	2	3	3	3	4	2	2	-1	19	
RTS Access-Plus - co-mingling ADA & general public			●		1	2	0	3	6	4	2	2	-1	19	

Legend - Evaluation Criteria

- 2 Positive
- 1 Somewhat positive
- 0 Neutral/no significant change
- 1 Somewhat negative
- 2 Negative



FIGURE 4-4: HENRIETTA – SERVICE MODE EVALUATION

SERVICE MODE	TRAVEL DEMAND (RIDERS/HR.)				EVALUATION CRITERIA									WEIGHT
	10+ RIDERS/HOUR	7 TO 9 RIDERS/HOUR	4 TO 6 RIDERS/HOUR	<4 RIDERS/HOUR	1X	2X	3X	3X	3X	2X	2X	1X	1X	
					PARTNERSHIP (P3)	RIDERSHIP POTENTIAL	LOW NET COST OF SERVICE (SUBSIDY PER TRIP)	SERVICE QUALITY	SOCIAL EQUITY (TITLE VI COMPLIANCE)	COMMUNITY SUPPORT	ORGANIZATIONAL CAPACITY	SUSTAINABLE FUNDING	LOW TECHNICAL RISK	
Personal Mobility on Demand				●	1	4	6	6	3	2	-2	1	2	23
Scheduled Microtransit			●		1	2	-3	3	3	2	4	2	1	15
On Demand Microtransit			●		1	4	3	3	6	4	2	2	-1	24
Flex Route Microtransit			●		1	2	3	3	3	4	2	2	-1	19
RTS Access-Plus - co-mingling ADA & general public			●		1	2	0	3	6	4	2	2	-1	19

Legend - Evaluation Criteria

- 2 Positive
- 1 Somewhat positive
- 0 Neutral/no significant change
- 1 Somewhat negative
- 2 Negative



FIGURE 4-5: IRONDEQUOIT – SERVICE MODE EVALUATION

SERVICE MODE	TRAVEL DEMAND (RIDERS/HR.)				EVALUATION CRITERIA									WEIGHT
	10+ RIDERS/HOUR	7 TO 9 RIDERS/HOUR	4 TO 6 RIDERS/HOUR	<4 RIDERS/HOUR	1X	2X	3X	3X	3X	2X	2X	1X	1X	
					PARTNERSHIP (P3)	RIDERSHIP POTENTIAL	LOW NET COST OF SERVICE (SUBSIDY PER TRIP)	SERVICE QUALITY	SOCIAL EQUITY (TITLE VI COMPLIANCE)	COMMUNITY SUPPORT	ORGANIZATIONAL CAPACITY	SUSTAINABLE FUNDING	LOW TECHNICAL RISK	
Personal Mobility on Demand				●	1	4	6	6	3	2	-2	1	2	23
Scheduled Microtransit			●		1	2	-3	3	3	4	4	2	1	17
On Demand Microtransit		●			1	4	3	3	3	4	2	2	-1	21
Flex Route Microtransit			●		1	2	3	3	3	4	2	2	-1	19
RTS Access-Plus - co-mingling ADA & general public			●		1	2	0	3	6	4	2	2	-1	19

Legend - Evaluation Criteria

- 2 Positive
- 1 Somewhat positive
- 0 Neutral/no significant change
- 1 Somewhat negative
- 2 Negative



FIGURE 4-6: LEXINGTON – SERVICE MODE EVALUATION

SERVICE MODE	TRAVEL DEMAND (RIDERS/HR.)				EVALUATION CRITERIA									WEIGHT
	10+ RIDERS/HOUR	7 TO 9 RIDERS/HOUR	4 TO 6 RIDERS/HOUR	<4 RIDERS/HOUR	1X	2X	3X	3X	3X	2X	2X	1X	1X	
					PARTNERSHIP (P3)	RIDERSHIP POTENTIAL	LOW NET COST OF SERVICE (SUBSIDY PER TRIP)	SERVICE QUALITY	SOCIAL EQUITY (TITLE VI COMPLIANCE)	COMMUNITY SUPPORT	ORGANIZATIONAL CAPACITY	SUSTAINABLE FUNDING	LOW TECHNICAL RISK	
Personal Mobility on Demand				●	1	4	6	6	3	2	-2	1	2	23
Scheduled Microtransit			●		1	2	-3	3	3	4	4	2	1	17
On Demand Microtransit		●			1	4	3	3	3	4	2	2	-1	21
Flex Route Microtransit			●		1	2	3	3	3	4	2	2	-1	19
RTS Access-Plus - co-mingling ADA & general public			●		1	2	0	3	6	4	2	2	-1	19

Legend - Evaluation Criteria

- 2 Positive
- 1 Somewhat positive
- 0 Neutral/no significant change
- 1 Somewhat negative
- 2 Negative



FIGURE 4-7: PITTSFORD/EASTVIEW - SERVICE MODE EVALUATION

SERVICE MODE	TRAVEL DEMAND (RIDERS/HR.)				EVALUATION CRITERIA										WEIGHT
	10+ RIDERS/HOUR	7 TO 9 RIDERS/HOUR	4 TO 6 RIDERS/HOUR	<4 RIDERS/HOUR	1X	2X	3X	3X	3X	2X	2X	1X	1X		
					PARTNERSHIP (P3)	RIDERSHIP POTENTIAL	LOW NET COST OF SERVICE (SUBSIDY PER TRIP)	SERVICE QUALITY	SOCIAL EQUITY (TITLE VI COMPLIANCE)	COMMUNITY SUPPORT	ORGANIZATIONAL CAPACITY	SUSTAINABLE FUNDING	LOW TECHNICAL RISK		
Personal Mobility on Demand				●	1	4	6	6	3	2	-2	1	2	23	
Scheduled Microtransit		●			1	2	0	3	3	4	4	2	1	20	
On Demand Microtransit			●		1	2	3	3	3	4	2	2	-1	19	
Flex Route Microtransit	●				1	4	6	6	3	4	2	2	-1	27	
RTS Access-Plus - co-mingling ADA & general public			●		1	2	0	3	6	4	2	2	-1	19	

Legend - Evaluation Criteria

- 2 Positive
- 1 Somewhat positive
- 0 Neutral/no significant change
- 1 Somewhat negative
- 2 Negative



FIGURE 4-8: WEBSTER – SERVICE MODE EVALUATION

SERVICE MODE	TRAVEL DEMAND (RIDERS/HR.)				EVALUATION CRITERIA									WEIGHT
	10+ RIDERS/HOUR	7 TO 9 RIDERS/HOUR	4 TO 6 RIDERS/HOUR	<4 RIDERS/HOUR	1X	2X	3X	3X	3X	2X	2X	1X	1X	
					PARTNERSHIP (P3)	RIDERSHIP POTENTIAL	LOW NET COST OF SERVICE (SUBSIDY PER TRIP)	SERVICE QUALITY	SOCIAL EQUITY (TITLE VI COMPLIANCE)	COMMUNITY SUPPORT	ORGANIZATIONAL CAPACITY	SUSTAINABLE FUNDING	LOW TECHNICAL RISK	OVERALL RATING
Personal Mobility on Demand				●	1	4	6	6	3	2	-2	1	2	23
Scheduled Microtransit			●		1	2	-3	3	3	4	4	2	1	17
On Demand Microtransit			●		1	2	0	3	3	4	2	2	-1	16
Flex Route Microtransit		●			1	4	3	3	3	4	2	2	-1	21
RTS Access-Plus - co-mingling ADA & general public			●		1	2	0	3	6	4	2	2	-1	19

Legend - Evaluation Criteria

- 2 Positive
- 1 Somewhat positive
- 0 Neutral/no significant change
- 1 Somewhat negative
- 2 Negative

## 5. Summary of Recommended Mode Alternatives

This section provides a summary of the three mobility mode alternatives that are recommended for implementation in the CMZs as part of the Reimagine RTS initiative.

The three recommended services for the RTS CMZs are:

- Flex Route Microtransit
- On Demand Microtransit
- Personal Mobility on Demand

### 5.1 Flex Route Microtransit

#### Description

As introduced previously, microtransit is a moderate capacity service designed for individuals traveling between various origins and destinations, and which operates on set schedules.

Flex Route Microtransit is a variant of microtransit suited in particular to areas with a linear characteristic and a relatively defined route. The service operates in a fixed schedule and incorporates traditional bus stops much like existing fixed-route services.

However, flex route service offers substantial advantages over fixed route in that it has 1.) a lower vehicle capacity more suited to demand in the CMZs, and 2.) the ability to deviate from the set route, typically by up to  $\frac{3}{4}$  mile, to provide a more curb-to-curb experience. Route deviations are based on customer requests through an online/mobile app or a customer call center.

#### 5.1.1 Service Description:

- Flex Route Microtransit operates along a defined route with a relaxed schedule that allows

flexibility for route deviations. The model is similar to existing RTS Route Deviation services in the outlying counties.

- Upon customer request, the vehicle will deviate from the route to serve points within approximately  $\frac{3}{4}$  mile, or as designated within the CMZ, to provide a curb to curb service.
- Following an off-route deviation, the bus will return to the point where it left the route it left, so that all fixed stops are served.

#### 5.1.2 Rider Experience:

- Customers can board the service at designated, posted bus stops, similar to fixed route stops today, based on schedule time points.
- If a customer cannot reach regular bus stops, route deviation may be a good option.
- To reserve a ride for curb to curb service (route deviation), customers can either:
  - Book a ride from a computer, tablet or mobile phone using an RTS website or app; or
  - Call an RTS dispatch or customer service center.
- Route deviated trip requests are required typically 15 to 30 minutes in advance, based on RTS policy to be determined.
- When making a deviated trip request, an approximate time of arrival at the requested destination will be provided. The customer can use this information if planning on making a connection to fixed route transit. (In the future a Mobility on Demand platform may be able to provide an integrated trip planning capability with fixed route service.)
- Rides will be shared with other passengers, similar to other transit modes. Intermediate

stops may be made between the trip origin and destination to accommodate other passengers.

#### 5.1.3 Fares:

- Flex Route fares with route deviation requests will be charged \$2.00, without discounts. This is similar to RTS Route Deviation fare policy in outlying counties.

#### 5.1.4 Service Span:

- Service operates weekdays from 6:00AM – 7:00PM in the Pittsford/Eastview and Webster CMZs. In Brockport, service is extended to 10:00 PM on weekdays during the school year. Weekend service is provided in all three CMZs from 6:00AM – 7:00PM.

#### 5.1.5 Base Service Recommendations and Enhancements:

- The base recommendation service level proposes 1 vehicle (7-passenger accessible microtransit van) per CMZ.
- Route length, travel time, allowable deviations, break/recovery time requirements, etc. determine the service frequency/schedule that can be provided in a given CMZ. This is subject to detailed service planning analysis.
- This base level of service assumes that NOT ALL arriving and departing fixed route trip (30-minute frequency) will be synchronized with a Flex Route Microtransit vehicle. This is because the round-trip cycle time to travel the route, including break/recovery time, is likely to exceed 30 minutes. There is a need to balance microtransit/fixed-route schedule coordination with acceptable vehicle utilization, based on assumed cycle times.
- For Brockport CMZ, the round trip cycle time between Brockport and Rochester Tech Park will likely approach 90 minutes. Given the longer distances/travel times involved, Brockport CMZ may require an additional vehicle to provide hourly service in each direction. This will be determined based on detailed service design analysis and confirmation of RTS service design objectives.
- Transfer opportunities between fixed-route and microtransit services can be communicated to customers through schedules and ride booking/trip planning applications. Passengers should

be made aware whether particular arriving fixed route trips to the Connection Hub provide a transfer to flex route service within a reasonable connection window.

- Service could be enhanced by providing additional trip frequency for Microtransit. At an upper extreme, flex route service frequency would match fixed route service to provide convenient transfers for every trip at the Connection Hub. A detailed service analysis of run times and cycle times for flex route service in each CMZ could be used to determine the additional fleet and service hours required to meet a given set of RTS service design criteria.
- Another enhancement option is increasing flex route service frequency only in peak periods, while shoulder and mid-day services operate at lower frequencies.
- Caution is warranted, however, in expanding microtransit frequency. The additional direct operated service hours will quickly increase operating costs, and will have a negative impact on productivity due to service over-supply. Existing fixed route service frequency should be kept in mind as a point of reference. Providing substantially increased service levels with lower productivity would run contrary to the Reimaging RTS Guiding Principle of “Ensuring System Sustainability.”

### Recommendation for RTS Community Mobility Zones

There are three zones where Flex Route Microtransit is particularly well suited due to their linear nature: Brockport, Pittsford/Eastview, and Webster.

A major drawback of the current fixed route service, however, is the relatively poor pedestrian and “last mile” connectivity to and from existing bus stops.

Flex route service will provide more curb-to-curb service in areas that are predominantly low-density and auto-oriented in character, and will therefore reach a potentially larger ridership base in the CMZs.

Additionally, because Flex Route Microtransit vehicles are accessible, the curb-to-curb service provide greater freedom and mobility to seniors and persons with functional limitations that prevent them from walking to or from bus stops.

## 5.2 On Demand Microtransit

### Description

Like Flex Route Microtransit, On Demand Microtransit is a variant of microtransit service that provides moderate capacity and a fixed schedule.

On Demand Microtransit, however, does not rely on a pre-determined linear route. Rather, the route is based entirely on customer demand and stop requests at any permissible location within the CMZ.

On Demand Microtransit customer pickups are based on customer requests through an online/mobile app or a customer call center.

#### 5.2.1 Service Description:

- On Demand Microtransit operates based on customer requested trips, serving any number of origins and destinations within the permissible CMZ area.
- There is no set route or schedule like a conventional transit service. Vehicles alter their routes based on particular customer demand, rather than using a fixed route or timetable.
- On Demand Microtransit does not use fixed bus stops. Instead, all trips are curb-to-curb based on requested customer origin and destination.
- Customers can use the on demand service to make a complete trip within a CMZ, or connect to fixed route service at the Connection Hub or bus stop for travel outside of the CMZ.

#### 5.1.2 Rider Experience:

- Customers no longer board the service at fixed bus stops; all trips must be booked in advance.
- To reserve an on demand ride for curb to curb service, customers can either:
  - Book a ride from a computer, tablet or mobile phone using an RTS website or app; or
  - Call an RTS dispatch or customer service center.
- On demand trip requests should be made 15 to 30 minutes in advance, though the trip is accommodated soon as an available vehicle is matched to the trip request and can reach the origin.

- When making an on demand trip request, an approximate time of arrival at the requested destination will be provided. The customer can use this information if planning on making a connection to fixed route transit. (In the future a Mobility on Demand platform may be able to provide an integrated trip planning capability with fixed route service.)
- Rides will be shared with other passengers, similar to other transit modes. Intermediate stops may be made between the trip origin and destination to accommodate other passengers.

#### 5.2.3 Service Span:

- Service operates weekdays from 6:00AM – 7:00PM in each CMZ, and weekends from 6:00AM – 7:00PM.
- There is no weekend service in the Lexington Avenue CMZ.

#### 5.2.4 Fares:

- On Demand fares are assumed to be \$1.00 to the Connection Hub or bus stop, or \$3.00 for a premium service connecting any two points within the CMZ.

#### 5.2.5 Base Service Recommendations and Enhancements:

- The base recommendation service level proposes 1 vehicle (7-passenger accessible microtransit van) per CMZ.
- On Demand Microtransit does not operate on a traditional schedule with a set cycle time—two factors that would traditionally influence fleet requirement. Rather, the fleet requirement is determined by 1.) the anticipated level of demand and 2.) the RTS service performance standard, such as the allowable wait time to serve each ride request.
- A longer advanced booking requirement (e.g. 30 minutes or more) would allow a smaller fleet to serve more requests at an acceptable performance level. If RTS can accommodate multiple service requests to various directions within the prescribed pick-up window, an adequate service level can be maintained with a minimal fleet.
- As an enhancement, additional vehicles can be provided at peak periods in response to latent

demand. The customer experiences a decreased wait time for requested trips, and RTS may be able to reduce the advanced booking requirement to a shorter timeframe.

- As with Flex Route Microtransit, however, RTS should be cautious of expanding the fleet due to the risk of service over-supply and the additional service costs that will be incurred by providing multiple vehicles and operators. Providing substantially increased service levels with lower productivity would run contrary to the Reimagining RTS Guiding Principle of “Ensuring System Sustainability.”
- Establishment of clear service performance metrics for on demand services are recommended so that RTS can monitor the balance of service supply and demand, and increase or decrease fleet and service hours as warranted.

## Recommendation for RTS Community Mobility Zones

On Demand Microtransit is suited for the four CMZs that lack a strong linear transit corridor, and which have rather dispersed trip origins and destinations. This includes the Greece, Henrietta, Irondequoit, and Lexington Avenue CMZs.

On Demand Microtransit allows for efficient service that is more direct than a comparable loop or fixed-route shuttle service that attempts to provide access to dispersed origins and destinations across a wide area. In Henrietta, for example various residential, retail, college, social service, and healthcare destinations are spread across the zone along multiple arterial corridors. The locations served on any particular On Demand Microtransit run will be tailored to only those locations where customers require pick up and drop off.

## 5.3 Personal Mobility on Demand

### Description

Personal Mobility on Demand, or PMOD, is a low-capacity service designed for individuals and small groups (up to five persons) traveling between various origins and destinations located along a dynamic itinerary formed in response to customer reservations. Like microtransit, reservations are made through an online/mobile application or a call center.

The key advantage of PMOD in the context of the CMZs is the cost structure based on service consumed (i.e., fixed subsidy per ride) versus cost based on hours of service provided (i.e., cost per revenue hour).

This means that service coverage can be provided at off-peak periods, such as early mornings and evenings, at a far lower cost than other modes including fixed-route and paratransit service.

Because PMOD is customer demand driven, and provided curb-to-curb service, it is also highly convenient and responsive to customer needs. This is a significant contrast with alternatives such as low-frequency fixed-route service, which may provide service along a set schedule only once per hour or less. Those looking for convenient transit alternatives and transfers at off-peak periods can greatly benefit from the implementation of PMOD.

### 5.3.1 Service Description:

- PMOD provides curb-to-curb service on demand, during hours when microtransit service is not operating. This allows the total service span in the CMZs to match the service span of fixed-route services: 5:00AM-Midnight on Weekdays, 6:00AM-Midnight on Weekends.
- Customers can use the PMOD service to make a complete trip connecting any two points within a CMZ, or connect to fixed route transit service for travel outside of the CMZ.
- PMOD will be operated by a third-party contractor such as a taxi company or transportation network company (TNC) such as Uber or Lyft.
- RTS only pays for PMOD services consumed, not service hours provided. This drastically reduces the cost of extending the service span hours for low ridership volumes as compared to direct-operated services.

### 5.3.2 Rider Experience:

- There are no bus stops or fixed pick-up locations for PMOD services; service is curb to curb
- To reserve a PMOD ride, customers can either:
  - Book from a mobile phone (using the PMOD provider’s App) to request a pick-up, or

- Call a dispatch or customer service center (operated by RTS or the PMOD provider, such as Lyft's Concierge service).
- PMOD requests are typically made 15 to 30 minutes in advance, though the trip is accommodated soon as an available vehicle is matched to the trip request and can reach the origin.
- When making a PMOD trip request, an approximate time of arrival at the requested destination will be provided. The customer can use this information if planning on making a connection to fixed route transit. (In the future a Mobility on Demand platform may be able to provide an integrated trip planning capability with fixed route service.)
- PMOD can be exclusive ride or shared with other passengers, as determined by RTS policy. If shared, intermediate stops may be made between the trip origin and destination to accommodate other passengers.
- Because PMOD uses a third-party operator, there is no RTS fleet requirement in the conventional sense. Vehicle/operator supply is managed by the third-party provider based on contract performance standards.
- PMOD service enhancement options include:
  - Expanding PMOD service hours, along with a corresponding reduction in microtransit hours, to reduce operating costs. This may be considered if microtransit productivity (e.g. cost/trip, trips/hour) is insufficient based on operational experience and low demand.
  - Offering supplemental, subsidized PMOD service to RTS Access registrants to destinations within or outside the CMZ. The advantage is more spontaneous, same-day travel, at reduced cost to RTS compared to Access trips. An example of this type of partnership is the Lyft pilot program with MBTA "The Ride" clientele in Boston.

### 5.3.3 Fares:

- Fares are reflected as an RTS subsidy per trip. A subsidy of up to \$5.00 per trip has been recommended. The balance of the trip cost is paid out-of-pocket by the customer.

### 5.3.4 Service Span:

- PMOD service is provided during hours when Microtransit service is not operating. This includes early morning on Weekdays (5:00AM-6:00AM), and evenings (7:00PM-Midnight) on Weekdays and Weekends.
- Weeknight evening service in Brockport CMZ during the school year is from 10:00PM-Midnight, due to extended Flex Route Microtransit operating hours in this zone.
- PMOD service is not provided on weekends in the Lexington Avenue CMZ.

### 5.3.5 Base Service Recommendations and Enhancements:

- The base recommendation is to provide PMOD service within the designated hours. PMOD will use accessible vehicles and is subject to operating conditions and performance standards as specified in a future RTS agreement with the PMOD provider.

## Recommendation for RTS Community Mobility Zones

A common concern of community stakeholders was the need for transit service that is more responsive to the needs of transit-dependent persons traveling outside of peak commuting periods and the traditional daytime/early evening service span of many of the existing fixed routes in the CMZs.

PMOD provides a mobility option that is more responsive to these community needs and offers higher quality of service during shoulder periods of the day. PMOD can be summoned on demand versus requiring customers to adhere to a low-frequency fixed-route schedule.

Finally, because PMOD costs are based on service consumed, RTS can supply service over a long service span that matches the frequency of future fixed route services – up to 19 hours per day on weekdays. Because costs only accrue on a per-customer basis, low customer volumes can be served much more cost effectively as compared to extending microtransit hours of service.

For these reasons, PMOD is proposed as a supplement to Flex Route Microtransit and On Demand Microtransit services in each CMZ.

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## 6. Service Analysis

### 6.1 Introduction

Based on the preferred mobility modes, the project team developed an operational scenario to assess cost and ridership impacts for future CMZ service.

This section presents the preferred service plan based on a service plan and key assumptions developed in partnership with RTS.

#### Preferred Service Plan

The three recommended mobility modes (Flex Route Microtransit, On Demand Microtransit, and Personal Mobility on Demand) are applied to the RTS service area in accordance with the following service plan as shown in Table 6-1.

Ridership estimates have been generated based on a delivery scheme whereby RTS self-operates microtransit (on demand and flex route services) is the primary mode of delivery. PMOD supplemental service will be provided early mornings and later evenings only.

As the service plan shows, a majority of core hours of service for microtransit in each CMZ will be operated by RTS (self-performed PMOD will provide early morning and evening service on a contracted, pay per service consumed cost model, as opposed to the pay per hour of service provided model of the microtransit services.

#### Fare Policy Assumptions

Preliminary Fare Policy assumptions for analysis purposes are as follows:

- PMOD – Customers will receive a \$5.00 RTS subsidy per trip. Any remaining balance would be paid out of pocket by the customer.
- On Demand Microtransit: \$1.00 to Connection Hub/fixed-route transfer location, \$3.00 anywhere within zone.
- Flex Route Microtransit: \$1.00 for pick-up at a stop along the route. Additional \$1.00 for route deviation request.

**TABLE 6-1:  
PROPOSED SERVICE PLAN BY CMZ AND MODE**

COMMUNITY MOBILITY ZONE	MICROTRANSIT (RTS OPERATED) SERVICE SPAN		PERSONAL MOBILITY ON DEMAND SERVICE SPAN	
	WEEKDAYS	WEEKENDS	WEEKDAYS	WEEKENDS
<b>Brockport CMZ</b>	6:00 AM-10:00 PM*	6:00AM-7:00PM	5:00AM-6:00AM; 10:00PM-Midnight	7:00PM-Midnight
<b>Greece CMZ</b>	6:00 AM-7:00 PM	6:00AM-7:00PM	5:00AM-6:00AM; 7:00PM-Midnight	7:00PM-Midnight
<b>Henrietta CMZ</b>	6:00 AM-7:00 PM	6:00AM-7:00PM	5:00AM-6:00AM; 7:00PM-Midnight	7:00PM-Midnight
<b>Irondequoit CMZ</b>	6:00 AM-7:00 PM	6:00AM-7:00PM	5:00AM-6:00AM; 7:00PM-Midnight	7:00PM-Midnight
<b>Lexington Ave CMZ</b>	6:00 AM-7:00 PM	N/A	5:00AM-6:00AM; 7:00PM-Midnight	N/A
<b>Pittsford/ Eastview CMZ</b>	6:00 AM-7:00 PM	6:00AM-7:00PM	5:00AM-6:00AM; 7:00PM-Midnight	7:00PM-Midnight
<b>Webster CMZ</b>	6:00AM-7:00PM	6:00AM-7:00PM	5:00AM-6:00AM; 7:00PM-Midnight	7:00PM-Midnight

\*During the school year

## 6.2 Ridership Estimation for Mobility Options

A Ridership Estimation Model was developed and provided to RTS to assist in planning and deployment of, or modifications to, mobility service scenarios in the future.

The service concepts and assumptions in populating and developing the model formulas are presented below.

### Service Design

- Microtransit – As noted in the service plan description, On Demand or Flex Route service to be provided by RTS (self-performed).
- PMOD service provided by taxi/TNC companies when RTS operated services are not operating in the CMZs: i.e., from 7:00PM to 12:00AM in most zones.

### Level of Service

- PMOD - Assumes up to 3 vehicles available in each CMZ for the span of service as indicated.
- Microtransit – As a base service assumption, assumes 1 vehicle in each CMZ for the span of service as indicated.
- Additional peak period capacity could be considered based on realized demand levels in each CMZ, if those levels exceed
- Note that future service design decisions and operating policies determined during implementation planning could impact induced demand levels and/or fleet vehicle count and capacity requirements.

### Ridership

- The ridership forecasting tool provides for a ‘low’ and ‘high’ demand estimate and are based on an assumed utilization ranging from 0.33 to 0.50 (for PMOD) and 0.50 to 0.67 (for microtransit) of available capacity for each span of service hour.
- “Coverage hours” refer to the maximum number of potential revenue service hours that could be deployed if necessary to meet demand for personal mobility service.

## Fares Calculations

- PMOD – The net cost of service is calculated on an assumed maximum of \$5.00 per trip flat subsidy distributed through fare policy. Assumes that the customer pays an initial fare equivalent to a regular transit fare; followed by the subsidy; after which the customer is responsible for the cost of longer trips. Example: Customer pays the first \$2.00 of taxi/TNC market-based fare; RTS pay up to \$5.00 subsidy; customer pays any amount above \$7.00 for a one-way ride.
- On Demand Microtransit: \$1.00 to transit hub. \$3.00 to any location within CMZ.
- Flex Route Microtransit: \$1.00 for walk-up, fixed route. Plus \$1.00 for advanced booked, route deviation pick up and/or drop off requests. For the purposes of analysis, it was assumed that fifty-percent of ridership estimates would request route deviation pick-ups and hence an average fare of \$1.50.

## 6.3 Analysis Summary

Service coverage and ridership estimates are presented in the following exhibits:

- Table 6-2: Operating Span and Vehicle Requirements
- Table 6-3: Coverage Hours and Ridership Estimates

The preferred service plan scenario assumes a total of 32,550 annual revenue hours (self-performed service).

RTS will require a minimum of seven (plus spare ratio) vehicles – 7-passenger, ADA-accessible vehicles according to base service level and demand estimates.

Additional service levels, induced demand, and/or high peaking of service demand in specific time periods could require additional fleet. These factors and the underlying service policy decisions that affect service supply and demand should be further investigated during future detailed implementation planning.



**TABLE 6-2:  
PROOPERATING SPAN AND VEHICLE REQUIREMENTS – PREFERRED SERVICE PLAN**

SERVICE AREA (CMZ)	RECOMMENDED LEVEL OF SERVICE - MON. - FRI.	RECOMMENDED LEVEL OF SERVICE - SAT., SUN. & HOLIDAYS	SERVICE MODE(S)	OPERATING SPAN WEEKDAY (HOURS)	OPERATING SPAN SAT/SUN/HOL (HOURS)	WEEKDAY VEHICLES IN SERVICE	SAT/SUN/HOL VEHICLES IN SERVICE
Brockport	5AM - 6AM, 10PM - Midnight	7PM - Midnight	Personal Mobility on Demand	3	5	2	2
	6AM - 10PM	6AM - 7PM	Flex Route Microtransit	16	13	1	1
			Total				
Greece	5AM - 6AM, 7PM - Midnight	7PM - Midnight	Personal Mobility on Demand	6	5	2	2
	6AM - 7PM	6AM - 7PM	On Demand Microtransit	13	13	1	1
			Total				
Henrietta	5AM - 6AM, 7PM - Midnight	7PM - Midnight	Personal Mobility on Demand	6	5	2	2
	6AM - 7PM	6AM - 7PM	On Demand Microtransit	13	13	1	1
			Total				
Irondequoit	5AM - 6AM, 7PM - Midnight	7PM - Midnight	Personal Mobility on Demand	6	5	2	2
	6AM - 7PM	6AM - 7PM	On Demand Microtransit	13	13	1	1
			Total				
Lexington Avenue	5AM - 6AM, 7PM - Midnight	N/A	Personal Mobility on Demand	6	0	2	0
	6AM - 7PM	N/A	On Demand Microtransit	13	0	1	0
			Total				
Pittsford/ Eastview	5AM - 6AM, 7PM - Midnight	7PM - Midnight	Personal Mobility on Demand	6	5	2	2
	6AM - 7PM	6AM - 7PM	Flex Route Microtransit	13	13	1	1
			Total				
Webster	5AM - 6AM, 7PM - Midnight	7PM - Midnight	Personal Mobility on Demand	6	5	2	2
	6AM - 7PM	6AM - 7PM	Flex Route Microtransit	13	13	1	1
			Total				



**TABLE 6-3:  
COVERAGE HOURS AND RIDERSHIP ESTIMATES**

SERVICE AREA (CMZ)	SERVICE MODE(S)	ANNUAL COVERAGE HOURS	CAPACITY PER COVERAGE HOUR	MAXIMUM ANNUAL SERVICE CAPACITY	LOW DEMAND	HIGH DEMAND	LOW ANNUAL RIDERSHIP ESTIMATE	HIGH ANNUAL RIDERSHIP ESTIMATE
<b>Brockport</b>	Personal Mobility on Demand	2,630	4	10,520	0.33	0.50	3,472	5,260
	Flex Route Microtransit	5,510	8	44,080	0.50	0.67	22,040	29,534
	Total				25,512	34,794		
<b>Greece</b>	Personal Mobility on Demand	4,160	4	16,640	0.33	0.50	5,491	8,320
	On Demand Microtransit	4,745	8	37,960	0.50	0.67	18,980	25,433
	Total				24,471	33,753		
<b>Henrietta</b>	Personal Mobility on Demand	4,160	4	16,640	0.33	0.50	5,491	8,320
	On Demand Microtransit	4,745	8	37,960	0.50	0.67	18,980	25,433
	Total				24,471	33,753		
<b>Irondequoit</b>	Personal Mobility on Demand	4,160	4	16,640	0.33	0.50	5,491	8,320
	On Demand Microtransit	4,745	8	37,960	0.50	0.67	18,980	25,433
	Total				24,471	33,753		
<b>Lexington Avenue</b>	Personal Mobility on Demand	3,060	4	12,240	0.33	0.50	4,039	6,120
	On Demand Microtransit	3,315	8	26,520	0.50	0.67	13,260	17,768
	Total				17,299	23,888		
<b>Pittsford/ Eastview</b>	Personal Mobility on Demand	4,160	4	16,640	0.33	0.50	5,491	8,320
	Flex Route Microtransit	4,745	8	37,960	0.50	0.67	18,980	25,433
	Total				24,471	33,753		
<b>Webster</b>	Personal Mobility on Demand	4,160	4	16,640	0.33	0.50	5,491	8,320
	Flex Route Microtransit	4,745	8	37,960	0.50	0.67	18,980	25,433
	Total				21,471	33,753		

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## 7. Recommendations by Community Mobility Zone

### 7.1 Introduction

This section provides a summary of preferred mobility options by CMZ based on the recommended mobility options identified previously:

- On Demand Microtransit
- Flex Route Microtransit
- Personal Mobility on Demand (PMOD)

The recommendations reflect the modes and assumptions used in the ridership model, as well as response to community demographics, geography, needs, and existing fixed-route service patterns in each CMZ.

A summary of recommendations for all seven CMZs is provided in the Table 7-1 below. Detailed descriptions and maps for individual CMZs are presented in the remainder of this section.

A map of all CMZs with the proposed CMZ boundary

modifications is shown in Figure 7-1. Details of the proposed boundary modifications are discussed within the detailed descriptions for each CMZ.

The proposed mobility services in each zone have a combined total service span of 19 hours on weekdays (5:00 AM – Midnight) and 18 hours on weekends (6:00 AM – Midnight) to match the span of the Reimagine RTS fixed routes.

This extended service span ensures that connections are possible to and from the fixed route system for those who rely upon transit very early or very late in the day. It also provides expanded service availability for intra-zone travel compared to existing fixed-route service. The relative cost-effectiveness of PMOD, based on cost per service consumed in low demand periods, allows for this extension of service span at a considerable cost reduction as compared to fixed cost per hour of service modes like fixed route and microtransit.

**TABLE 7-1:  
IMPLEMENTATION OF RECOMMENDED MODES BY CMZ**

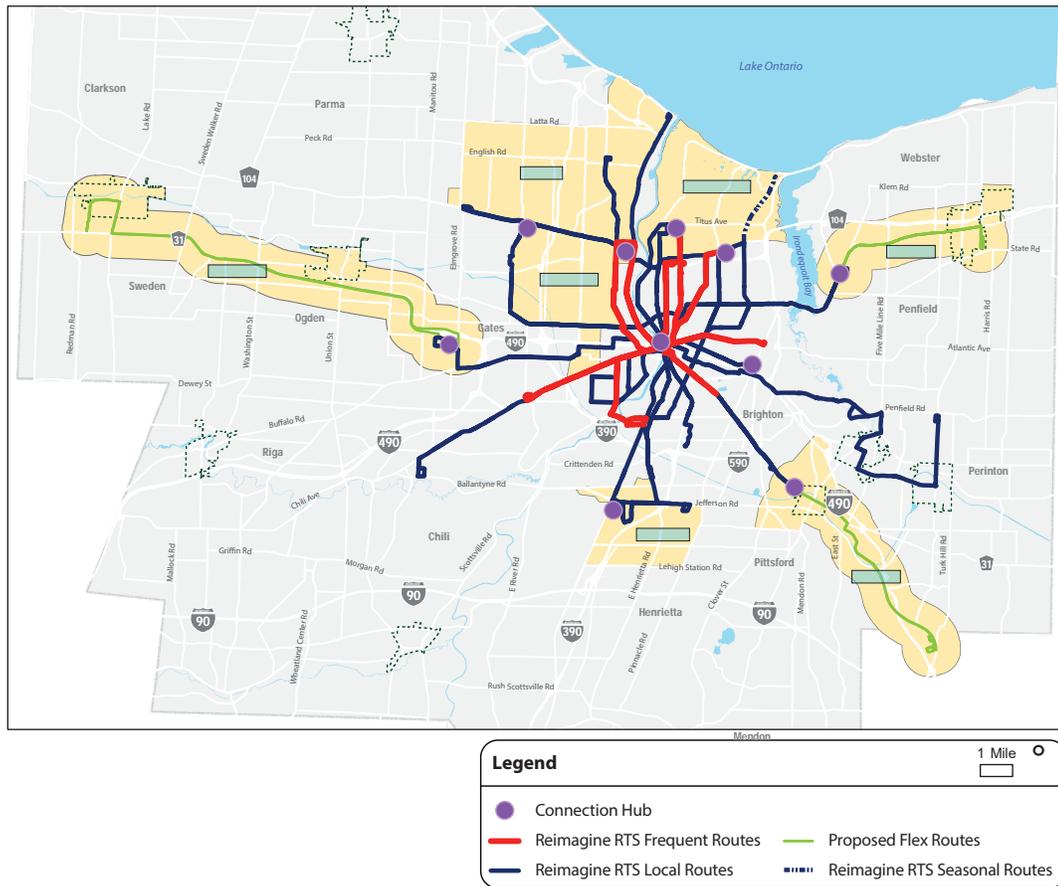
COMMUNITY MOBILITY ZONE	FLEX ROUTE MICROTRANSIT	ON DEMAND MICROTRANSIT	PERSONAL MOBILITY ON DEMAND (PMOD)
<b>Brockport CMZ</b>	●		●
<b>Greece CMZ</b>		●	●
<b>Henrietta CMZ</b>		●	●
<b>Irondequoit CMZ</b>		●	●
<b>Lexington Ave CMZ</b>		●	●
<b>Pittsford/ Eastview CMZ</b>	●		●
<b>Webster CMZ</b>	●		●



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Figure 7-1: Community Mobility Zones



## 7.2 Brockport CMZ Recommendations

### Overview

The linear, point-to-point nature of the existing Route 104 corridor in the Brockport CMZ is suited to a Flex Route Microtransit service model.

The proposed flex route serves destinations in the villages of Brockport and Spencerport, as well as rural locations along the corridor with poor pedestrian connectivity to conventional bus stops.

Supplemental PMOD service provides additional travel options outside the peaks, replacing the former infrequent fixed route service.

Connections to RTS fixed route service will be provided through the proposed Connection Hub at Rochester Tech Park.

### Service Modes in CMZ

**Flex Route Microtransit** – Microtransit along the former Route 104 corridor from Rochester Tech Park to Brockport (via Spencerport).

**Personal Mobility on Demand (PMOD)** provides additional service span in shoulder periods at a lower operating cost based on service consumed.

### Proposed Service Spans

BROCKPORT	WEEKDAYS	WEEKENDS/ HOLIDAYS
<b>Flex Route Microtransit</b>	6:00 AM-10:00 PM (until 7:00 PM outside of the school year)	6:00AM-7:00 PM
<b>Personal Mobility on Demand (PMOD)</b>	5:00AM-6:00 AM; and 10:00 PM-Midnight (from 7:00 PM to Midnight outside of the school year)	7:00PM - Midnight

Table 7-2: Brockport CMZ Service Spans

The service span for microtransit in the Brockport CMZ extends longer than other CMZs, until 10:00 pm on weekdays during the school year, to accommodate customers traveling to and from The College at

Brockport. At other times of year, microtransit service will conclude at 7:00 pm, with PMOD from 7:00 pm to Midnight.

### CMZ Boundaries

The service within the CMZ generally includes flex route service within 3/4 mile radius provided route deviation within 3/4 mile radius of the Microtransit route along the 531/31 corridor. Additionally, the CMZ boundary includes the corporate boundary of the Villages of Brockport and Spencerport, given the density of destinations in this area.

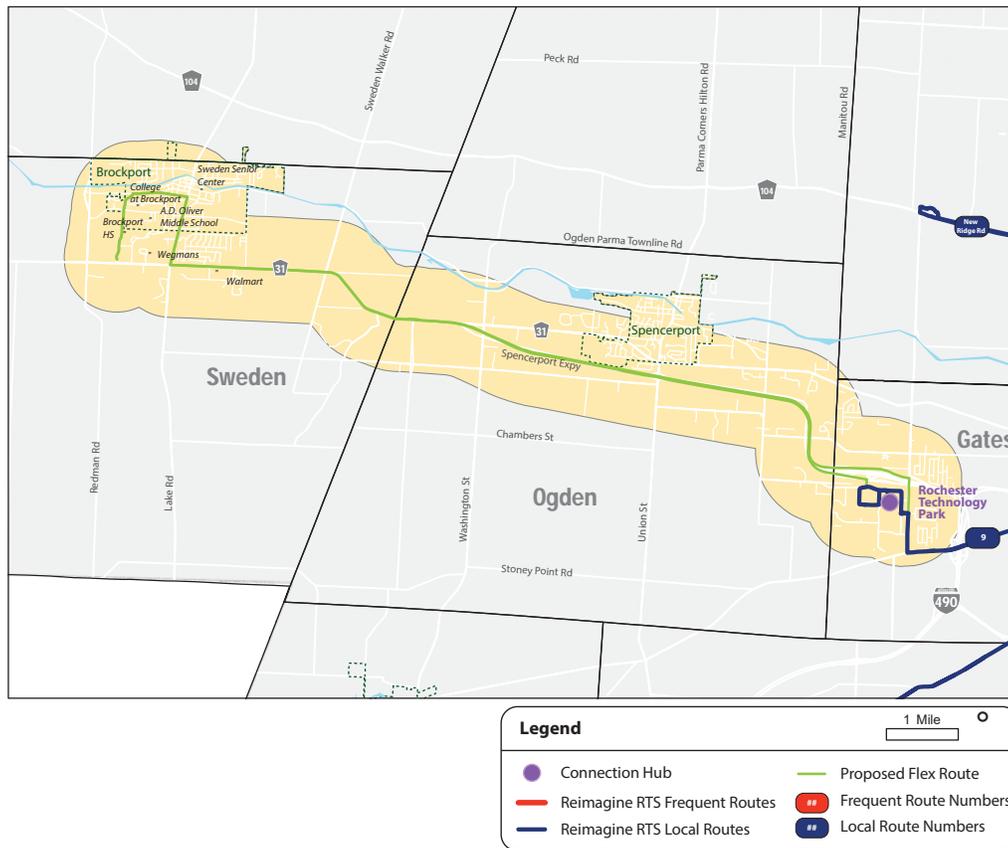
### Key Destinations Served

Key destinations in the proposed CMZ boundary include:

- The College at Brockport
- Village of Brockport
- Village of Spencerport
- Rochester Tech Park
- Brockport High School
- A.D. Oliver Middle School
- Brockport Retail Corridors
- Sweden Senior Center



Figure 7-2: Brockport Community Mobility Zone



## 7.3 Greece CMZ Recommendations

### Overview

The Greece CMZ includes a number of truncated former fixed route segments in a low-density zone with dispersed travel patterns. This pattern is not suited to linear or loop services.

The proposed service connects dispersed origins and destinations within the CMZ, as well as last-mile connectivity to and from Ridge Road fixed route services and the Connection Hub near Greece Ridge Mall. Connections to frequent service on Lake and Dewey as well as Eastman BP connection hub.

### Service Modes in CMZ

**On Demand Microtransit** to serve dispersed origins and destinations within the zone.

**Personal Mobility on Demand (PMOD)** provides additional service span in shoulder periods at a lower operating cost based on service consumed.

### Proposed Service Spans

GREECE	WEEKDAYS	WEEKENDS/ HOLIDAYS
<b>On Demand Microtransit</b>	6:00 AM- 7:00 PM	6:00AM- 7:00 PM
<b>Personal Mobility on Demand (PMOD)</b>	5:00AM-6:00 AM; and 7:00 PM-Midnight	7:00PM - Midnight

Table 7-3: Greece CMZ Service Spans

### CMZ Boundaries

The Greece CMZ is bounded by North Greece Road to the west; West Ridge Road to the south; Lake Avenue to the east; Beach Avenue, Edgemere Drive, Dewey Avenue, and English Road to the north.

The CMZ boundary allows connections to Lake Ave. fixed route transit, and recreational amenities in Port of Rochester/Ontario Beach Park area (Charlotte). Direct connections to the Irondequoit CMZ are also possible in the Port of Rochester area.

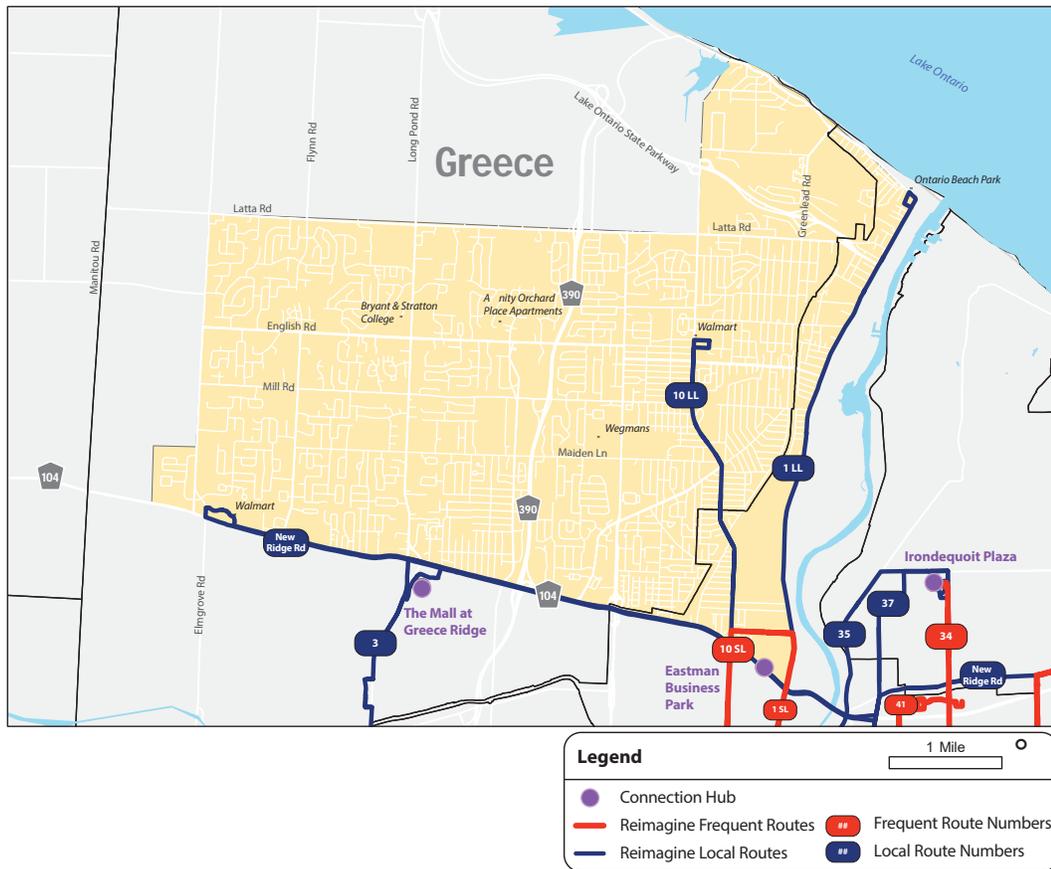
### Key Destinations Served

Key destinations in the proposed CMZ boundary include:

- The Mall at Greece Ridge (Fixed Route Connections)
- Bryant & Stratton College
- Affinity Orchard Place Apartments
- Ridge Road Retail Corridor
- Latta Road Corridor/Wegmans
- Walmart (2 Locations)
- Charlotte Beach/Ontario Beach Park



Figure 7-3: Greece Community Mobility Zone



## 7.4 Henrietta CMZ Recommendations

### Overview

The dispersed travel patterns and geographic characteristics of the Henrietta CMZ are not conducive to linear or loop routing, but are suited to an On Demand Microtransit model.

The proposed service provides flexibility in trip times and origins-destinations, both within the zone and as a feeder to RTS fixed route service at the Connection Hub near Marketplace Mall.

RTS services are supplemented by the RIT shuttle system, and offer university students and staff additional accessibility options to destinations not directly served by RIT shuttles. Connections with the RIT shuttle are envisioned at the Connection Hub.

Extended PMOD service will benefit retail workers, students, and recreational trips within the CMZ.

There are additional employment centers on John St south of Bailey, and along Thruway Park Drive, that RTS should consider serving in the future as funding permits.

### Service Modes in CMZ

**On Demand Microtransit** to serve dispersed origins and destinations within the zone.

**Personal Mobility on Demand (PMOD)** provides additional service span in shoulder periods at a lower operating cost based on service consumed.

### Proposed Service Spans

HENRIETTA	WEEKDAYS	WEEKENDS/ HOLIDAYS
<b>On Demand Microtransit</b>	6:00 AM- 7:00 PM	6:00AM- 7:00 PM
<b>Personal Mobility on Demand (PMOD)</b>	5:00AM-6:00 AM; and 7:00 PM-Midnight	7:00PM - Midnight

Table 7-4: Henrietta CMZ Service Spans

### CMZ Boundaries

The Henrietta CMZ is an area defined as the Town of Henrietta north of Lehigh Station Road, and bounded on the north by Jefferson Road and Brighton-Henrietta Town Line Road.

The CMZ is bounded on the west by West Henrietta Road and Southtown Plaza, and on the east by the Henrietta-Pittsford town line.

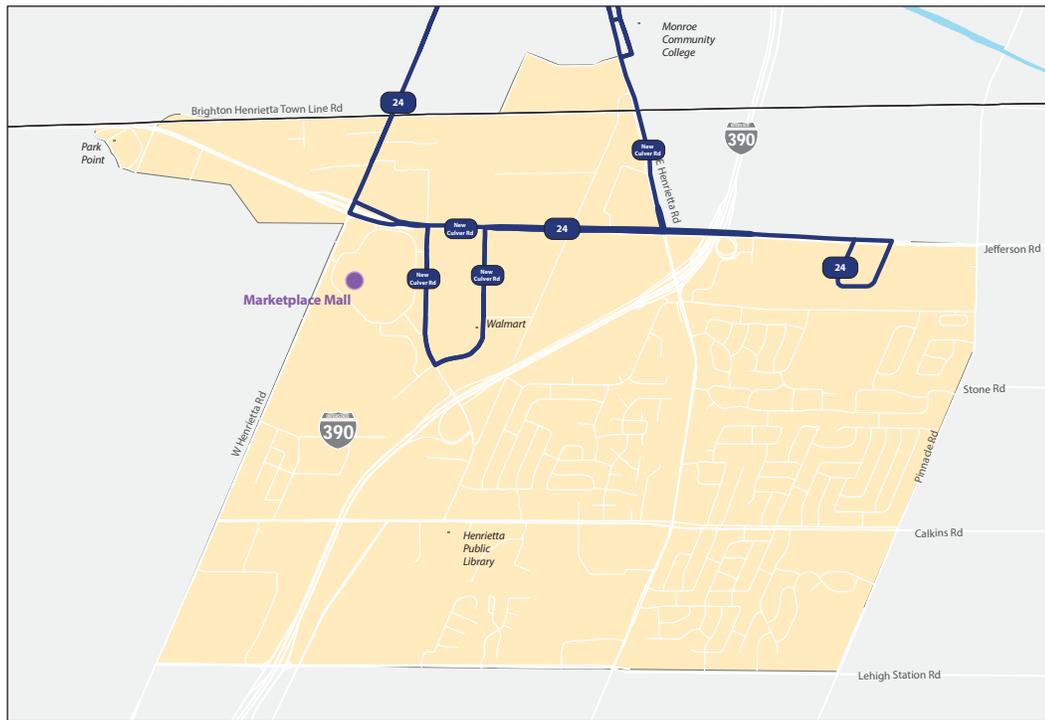
This CMZ boundary includes the core retail and commercial areas of Henrietta, and numerous dispersed residential and service destinations.

### Key Destinations Served

Key destinations in the proposed CMZ boundary include:

- Marketplace Mall and Henrietta Retail Core
- Jefferson Road Corridor
- Henrietta Town Hall
- Henrietta Public Library
- Future Veterans Administration Outpatient Facility, Calkins Road
- Dispersed senior, affordable/assisted housing, and student housing locations throughout the CMZ

**Figure 7-4: Henrietta Community Mobility Zone**



**Legend**

1 Mile

- Connection Hub
- Reimagine RTS Frequent Routes
- Reimagine RTS Local Routes
- 24 Frequent Route Numbers
- 24 Local Route Numbers

Henrietta



## 7.5 Irondequoit CMZ Recommendations

### Overview

The Irondequoit CMZ has multiple future fixed route services in the southern reaches of the zone, and two proposed Connectivity Hubs - Irondequoit Plaza and Skyview on the Ridge. Destinations within the CMZ are predominantly low density and residential, with dispersed origins and destinations and no dominant travel corridor.

The proposed service will serve many-to-many travel connections within the CMZ, as well as last-mile connectivity to the regional fixed route system.

### Service Modes in CMZ

**On Demand Microtransit** to serve dispersed origins and destinations within the zone.

**Personal Mobility on Demand (PMOD)** provides additional service span in shoulder periods at a lower operating cost based on service consumed.

### Proposed Service Spans

IRONDEQUOIT	WEEKDAYS	WEEKENDS/ HOLIDAYS
On Demand Microtransit	6:00 AM- 7:00 PM	6:00AM- 7:00 PM
Personal Mobility on Demand (PMOD)	5:00AM-6:00 AM; and 7:00 PM- Midnight	7:00PM - Midnight

Table 7-5: Irondequoit CMZ Service Spans

### CMZ Boundaries

The Irondequoit CMZ is outlined by the Genesee River on the west; Lake Ontario to the north; Irondequoit Bay to the east; and East Ridge Road to the south.

The CMZ includes connections to fixed route transit within the southern reaches of the zone. Access to recreational amenities are available in the north, including the Port of Rochester/Ontario Beach Park area (Charlotte). Direct connections to the Greece CMZ are also possible in the Port area, as well as Lake Ave. corridor fixed route service.

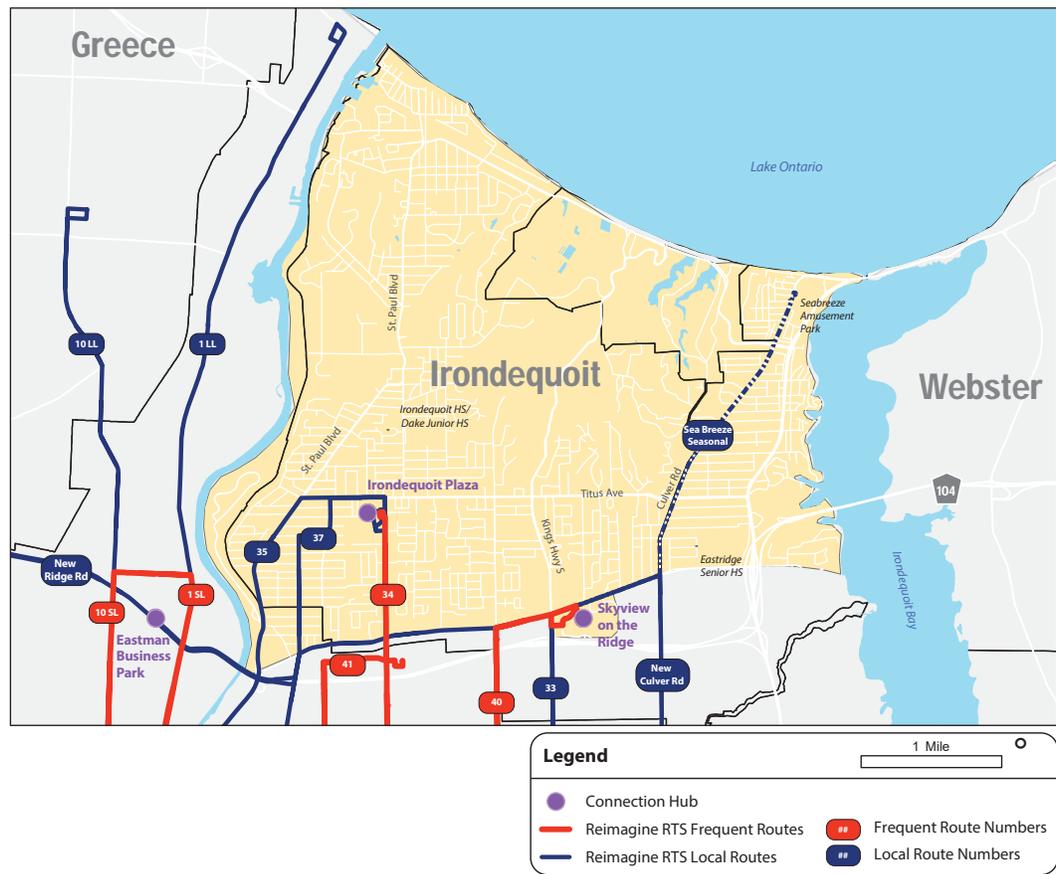
### Key Destinations Served

Key destinations in the proposed CMZ boundary include:

- Skyview on the Ridge
- Ridge/Titus Retail Corridors
- Irondequoit Bay Park
- West Irondequoit High School
- Dake Middle school
- Seabreeze Amusement Park (supplements seasonal fixed route service)
- Lakeshore communities and attractions
- Seneca Park Zoo
- Irondequoit Plaza
- Durand Eastman Park



Figure 7-5: Irondequoit Community Mobility Zone



## 7.6 Lexington Avenue CMZ Recommendations

### Overview

The proposed On Demand Microtransit service is oriented towards serving the industrial zone with dispersed destinations, with a need to serve shift workers over a wide service span. Demand patterns and zone geography are less conducive to linear or looping route.

The periphery of the Lexington CMZ will continue to be served by fixed route, providing walking access to destinations near the zone edges.

CMZ travelers will benefit from the increased service span and more convenient connections, including shoulder period PMOD options supporting shift and retail workers in particular.

### Service Modes in CMZ

**On Demand Microtransit** to serve dispersed origins and destinations within the zone.

**Personal Mobility on Demand (PMOD)** provides additional service span in shoulder periods at a lower operating cost based on service consumed.

### Proposed Service Spans

LEXINGTON	WEEKDAYS	WEEKENDS/ HOLIDAYS
On Demand Microtransit	6:00 AM- 7:00 PM	N/A
Personal Mobility on Demand (PMOD)	5:00AM-6:00 AM; and 7:00 PM-Midnight	N/A

Table 7-6: Lexington CMZ Service Spans

The proposed service in the Lexington CMZ is Monday through Friday only. No weekend or holiday service is proposed in the Lexington Avenue CMZ.

### CMZ Boundaries

The Lexington CMZ is bounded by West Ridge Road to the north; Lake Avenue, Ridgeway Avenue, and Dewey Avenue to the east; Lyell Avenue and Spencerport Road to the south; and Long Pond Road to the west. Service also extends south past Lyell Avenue into an area bounded by Mt. Read Boulevard and Cairn Street to the west, Chili Avenue to the south, and Hague Street to the east.

Access to fixed route services is possible along the north, south, east, and west edges of the zone, as well as the Connection Hubs at Eastman Business Park and near Greece Ridge Mall.

### Key Destinations Served

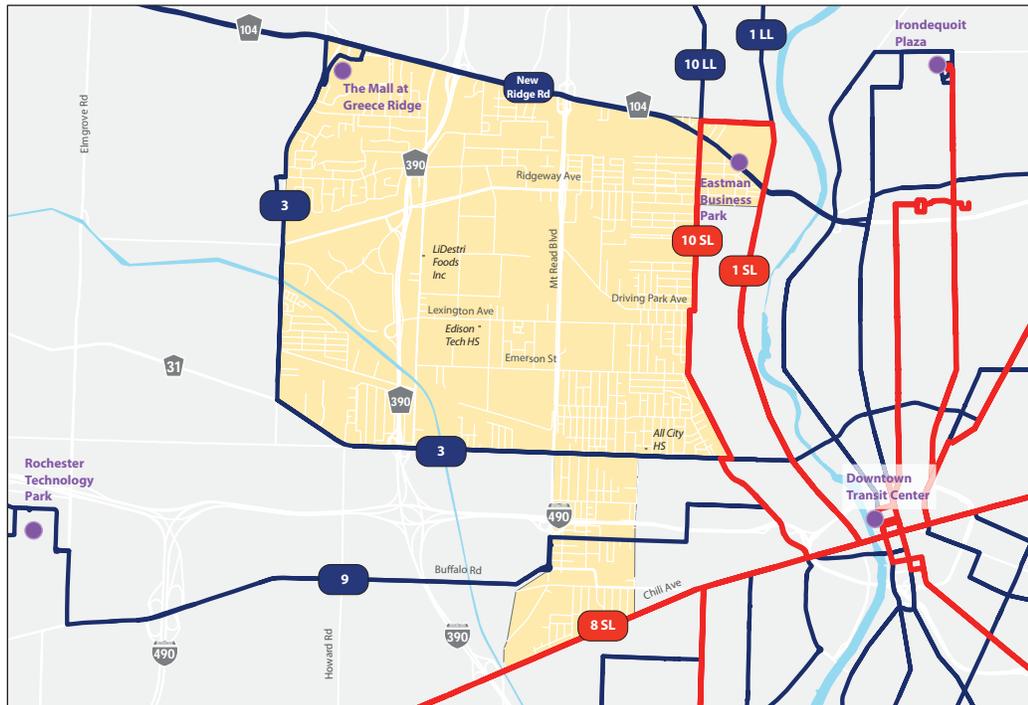
Key destinations in the proposed CMZ boundary include:

- Lexington Ave. Industrial Corridor
- Eastman Business Park
- Edison Career and Technology HS
- Greece Ridge Mall



Figure 7-6: Lexington Community Mobility Zone

Irondequoit



**Legend**

1 Mile

- Connection Hub
- Reimagine RTS Frequent Routes
- Reimagine RTS Local Routes
- Frequent Route Numbers
- Local Route Numbers

## 7.7 Pittsford/Eastview CMZ Recommendations

### Overview

The Pittsford/Eastview CMZ contains both local and long-distance, commuter-oriented fixed route services that will be eliminated.

The proposed service focuses on serving local origins and destinations along the north-south NYS Route 31/96 corridor, including the Village of Pittsford, schools, colleges, and major retail/employment destinations like Eastview Mall.

Connections to fixed route service will be possible through the proposed Connection Hub located at Concentrix in Pittsford.

### Service Modes in CMZ

**Flex Route Microtransit** – Microtransit along a central spine within the Pittsford/Eastview Corridor from Pittsford Plaza to Eastview Mall.

**Personal Mobility on Demand (PMOD)** provides additional service span in shoulder periods at a lower operating cost based on service consumed.

### Proposed Service Spans

PITTSFORD/EASTVIEW	WEEKDAYS	WEEKENDS/HOLIDAYS
<b>Flex Route Microtransit</b>	6:00 AM-7:00 PM	6:00AM-7:00 PM
<b>Personal Mobility on Demand (PMOD)</b>	5:00AM-6:00 AM; and 7:00 PM-Midnight	7:00PM-Midnight

Table 7-7: Pittsford CMZ Service Spans

### CMZ Boundaries

The Pittsford/Eastview CMZ runs between Pittsford Plaza in the Town of Pittsford to Eastview Mall in Victor, (Ontario County) along NYS Routes 31 and 96.

The primary route travels along Monroe Avenue/Route 31 into the Village of Pittsford, where it continues southeast along Route 96 through Bushnell’s Basin to Eastview Mall.

Route deviations are typically up to ¼ of a mile on either side of the main route, but expands to include the area near the intersection of Clover Street and Jefferson Road. This allows service to key destinations including St. John Fisher College and Cloverwood Senior Living.

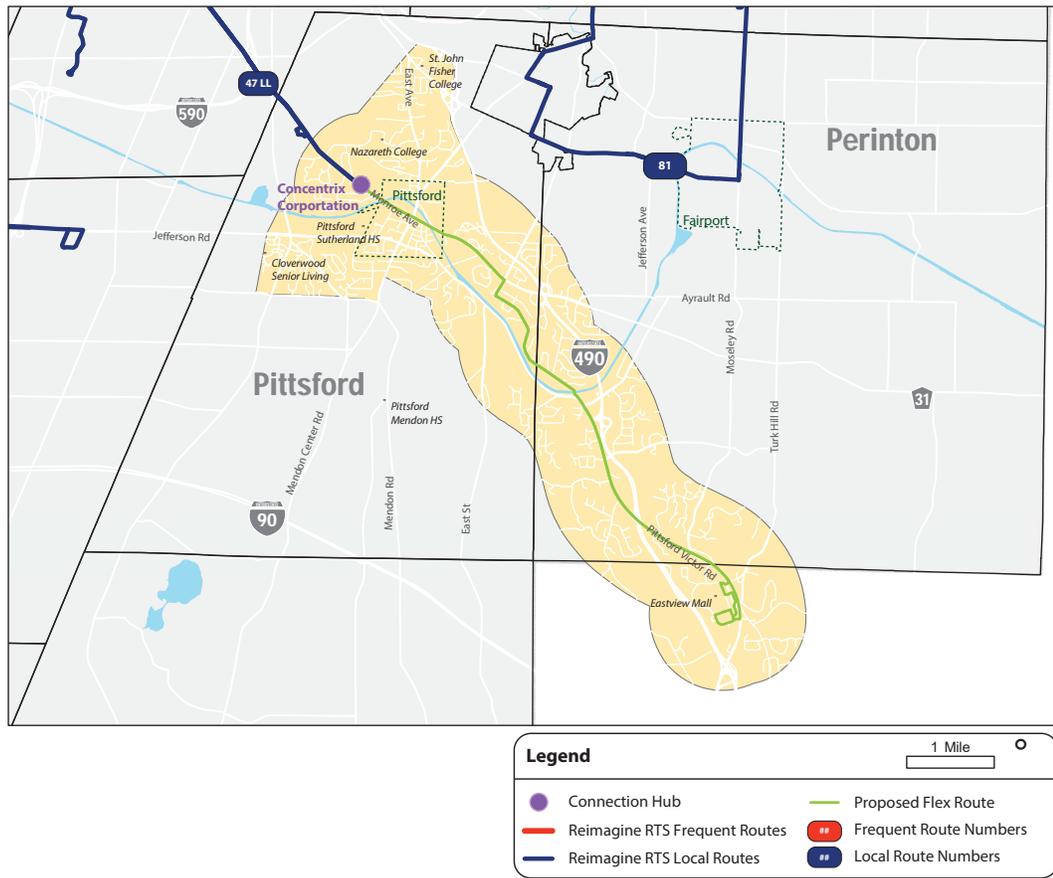
### Key Destinations Served

Key destinations in the proposed CMZ boundary include:

- Nazareth College
- St. John Fisher College
- Village of Pittsford
- Cloverwood Senior Living
- Concentrix
- Pittsford Plaza
- Pittsford Sutherland HS
- Southeast Family Branch YMCA
- Eastview Mall/Retail Corridor
- Eastview Mall Park and Ride



Figure 7-7: Pittsford - Eastview Community Mobility Zone



## 7.8 Webster CMZ Recommendations

### Overview

The proposed service focuses on the linear Ridge Road corridor where Route 103 service currently operates.

Curb-to-curb route deviation provides improved system access to transit in a corridor dominated by automobile-oriented land use and low pedestrian connectivity.

PMOD provides additional service span in shoulder periods for retail workers, healthcare workers, and transit-dependent persons.

### Service Modes in CMZ

**Flex Route Microtransit** – Microtransit along the Ridge Road corridor from BayTowne Plaza to Phillips Village.

**Personal Mobility on Demand (PMOD)** provides additional service span in shoulder periods at a lower operating cost based on service consumed.

### Proposed Service Spans

WEBSTER	WEEKDAYS	WEEKENDS/ HOLIDAYS
<b>Flex Route Microtransit</b>	6:00 AM- 7:00 PM	6:00AM- 7:00 PM
<b>Personal Mobility on Demand (PMOD)</b>	5:00AM-6:00 AM; and 7:00 PM-Midnight	7:00PM- Midnight

Table 7-8: Webster CMZ Service Spans

### CMZ Boundaries

The Webster CMZ is defined as an area that runs between BayTowne Plaza in the Town of Penfield and Phillips Village (Phillips Road) in the Village of Webster along Empire Boulevard and Ridge Road.

Route deviations are permitted within 3/4 of a mile on either side of the main route, plus within the Village of Webster. This includes a northerly extension that encompasses the Xerox Webster site. Connections to fixed route service will be available at the BayTowne Plaza Connection Hub.

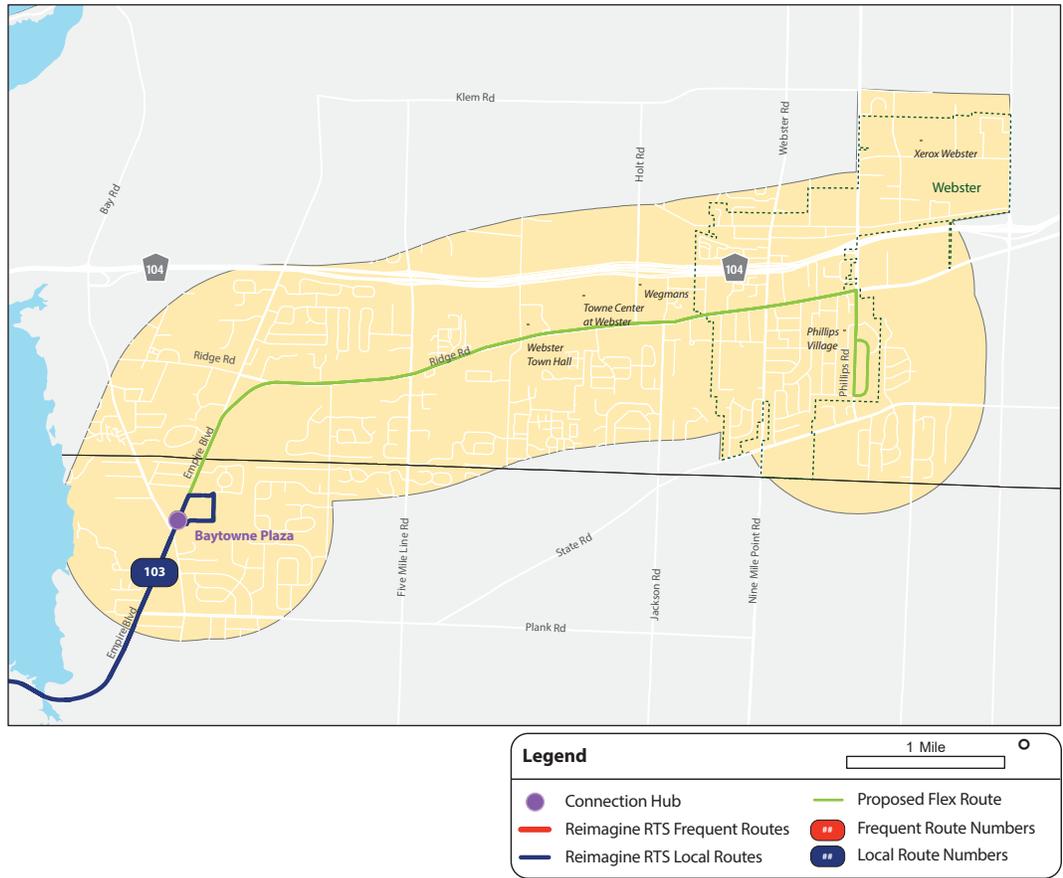
### Key Destinations Served

Key destinations in the proposed CMZ boundary include:

- Ridge Road Retail and Service Corridor
- BayTowne Plaza
- Town Center at Webster
- Webster Town Hall
- Phillips Village
- Village of Webster
- Xerox Webster Site



Figure 7-8: Webster Community Mobility Zone





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## 8. Next Steps: Implementation of Mobility Alternatives

### 8.1 Introduction

Following adoption of the Reimagine RTS plan by the RGRTA Board of Commissioners, RTS will need to embark on a series of inter-related activities to prepare for the implementation of new mobility alternatives in the seven CMZs by summer of 2020.

This section contains a brief discussion of activities that will be required to implement the recommendations.

Included is a list of internal activities required to prepare the RTS organization, staff, fleet, infrastructure, and technology.

Additionally, the process includes activities to continue to engage community stakeholders to refine the service concept, educate future customers, and develop operational and financial partnerships.

An advantage for RTS in launching its new mobility services is the increasingly rich set of peer agency examples and lessons learned regarding many of the topics introduced below. Peer agency consultations and site visits to experience operational mobility services firsthand is encouraged for key RTS staff responsible for implementation.

### 8.2 RTS Mobility Working Group

As an industry best practice, the study team recommends formation of a Mobility Working Group to steer implementation of Mobility alternatives through the Summer 2020 launch and initial operational period.

The Mobility Working Group should consist of cross-functional representation from key departments within RTS responsible for launch of what is effectively a new service mode for the agency. Key representatives within the Mobility Working Group should include but are not limited to:

- Chief Executive Officer/Executive Team
- Community Engagement and External Relations
- Service Planning and Scheduling
- Transportation Services
- Information Technology
- Fleet Maintenance
- Facilities Maintenance
- Marketing and Communications
- Finance
- Labor Representative
- Engineering

### 8.3 Service Planning

The foregoing analysis is based on service planning assumptions developed by the study team in consultation with RTS.

The service planning assumptions are intended for planning and comparative purposes, but further service planning will be required as a next step to refine operational parameters, develop run-cutting, confirm fleet requirements, and improve operations and maintenance cost forecasts. There are also service optimization opportunities, such as sharing vehicles among CMZs during off-peak periods, which were beyond the scope of this analysis. Coordination with future fixed-route scheduling, to facilitate convenient transfers at Connection Hubs, is another future consideration.

It is anticipated that service plan refinement will also include fine-tuning service delivery, service routing, hours of service, and fare policy.

Further community engagement may also identify RTS business partnership opportunities to support service

expansion or to address specific needs. Such partnerships may have an impact on service plan development, fleet requirements, etc.

User comprehension is an important element of the success of new mobility options. This includes where it goes, how to use the service, and what to pay. Adjustments to CMZ boundaries to ensure user comprehension (e.g., alignment with political boundaries, inclusion of local landmarks) is likely to be a topic of ongoing discussion with community stakeholders.

Finally, the initial service plan at the summer 2020 launch should be revisited based on community response. Realized customer demand after the service launch will merit a re-evaluation of service levels within each CMZ, including coverage, frequency, service span, etc. Should customer response be less than initially anticipated, RTS should make clear to external stakeholders that it reserves the right to redeploy resources to more productive uses.

## 8.4 Operational and Organizational Readiness

As a new mode, implementation of the mobility alternatives will require organizational/staffing capacity, development of policies and standard operating procedures, process re-engineering, and training. These changes will impact senior management, support departments, and front-line customer service personnel including operators.

An important aspect of organizational change is establishment of a call center function to support customer trip requests and other questions or concerns. RTS may build upon its existing capacity and infrastructure for customer service or paratransit reservations, for instance, but a new set of standard operating procedures and policies must be developed.

Modal integration is another consideration to ensure that new mobility alternatives are integrated appropriately with fixed route and paratransit operations at Connection Hubs for the convenience and safety of transferring customers.

## 8.5 Marketing and Branding

As a new service offering, RTS must consider the branding, marketing, and roll-out of the new mobility services, in addition to other concurrent service changes being implemented as part of the Reimagine RTS scenario.

Several peer agencies have opted to create a unique sub-brand for their mobility services, to create a more visible brand presence and to generate interest around the new service. That said, it is important that RTS communicates that the service is an integral part of the overall transit network.

User awareness and training is a key aspect of a successful launch. Existing and potential customers must understand what the service is, where it goes, and how to use it. Customers must also be familiarized with the technology tools that support the service, as well as the options available to them if they cannot access those tools.

## 8.6 Technology Procurement and Implementation

As a technology-enabled mode, the new mobility experience is highly dependent on the quality and functionality of RTS technology systems.

RTS has extensive experience with advanced technology implementation for fixed route and paratransit services; a lesson learned at RTS and other peer agencies is the significant amount of time and effort that is required to ensure successful technology implementation that meets the operational requirements of the system and the expectations of increasingly tech-savvy customers.

The following are technology systems that will be required to support new mobility implementation. As a direct-operated service, it is assumed that RTS will be implementing the following supporting technologies directly, rather than outsourcing to a third-party operator:

- Trip planning/trip discovery application and/or integration with enterprise systems
- Mobility dispatch and operations management system
- Customer reservations/trip booking system
- Customer service/call center reservations

support system

- Fare system integration and/or mobile or in-app fare payment options.

It is anticipated that RTS will procure the necessary technology systems through a competitive procurement based on system functional requirements developed as part of the procurement documentation.

## 8.7 PMOD Operator Procurement

Personal Mobility on Demand, or PMOD, is envisioned as a contract-operated supplement to direct operated RTS services. Payment to the vendor will be based on service consumed, not hours of service provided.

It is assumed that RTS will issue a competitive procurement to retain a contract operator for supplemental PMOD services. There is an increasing body of transit agency experience with procurement, contracting, and performance monitoring for PMOD services. RTS can also consider an industry request for information or similar discovery process to gauge interest among potential operating partners and inform the procurement process and contract structure.

As with all procurements, RTS should be mindful of the timeline for vendor procurement, selection, and startup of service, and is encouraged to initiate the process well in advance of the summer 2020 service launch date.

## 8.8 Microtransit Fleet Procurement

Microtransit will rely on acquisition of a new fleet of ADA accessible vehicles, of approximately 7-12 person capacity, outfitted with the requisite technology and branded with a new RTS mobility livery. These

vehicles are assumed to be RTS owned, operated, and maintained, and possibly procured through an existing procurement mechanism.

A potential option for the initial launch is use of retrofitted paratransit vehicles drawn from the existing RTS fleet, or surplus RTS regional vehicles if available.

## 8.9 Infrastructure Readiness

The connection of mobility services to fixed routes and paratransit presumes the implementation of RTS Connection Hubs in each CMZ. At the time of writing, final Connection Hub locations, facility requirements, and designs were being developed by RTS.

Implementation of the Connection Hubs is presumed to be a prerequisite for implementation of the new mobility services, as they provide an essential link to the RTS network. The Mobility Working Group should be closely involved in the ongoing development of the Connection Hubs to ensure that they meet the customer, operational, and technology needs of the future mobility hubs.

Minor modifications to existing bus route signage is anticipated in CMZs where flex route service is proposed. This signage should incorporate the new branding of the mobility services as discussed above. Other existing bus stop signage for cancelled fixed route services in the CMZs will be removed.